

Playful approaches and coping with childhood cancer treatment

Abordagens lúdicas e o enfrentamento do tratamento oncológico na infância

Enfoques lúdicos y afrontamiento del tratamiento del cáncer infantil

Nadja Caroline Bezerril Lopes ; Ana Cláudia Gomes Viana ; Zirleide Carlos Félix 
Jancelice dos Santos Santana ; Patrícia Tavares de Lima ; Ana Lúcia de Medeiros Cabral 

ABSTRACT

Objective: to demonstrate how, in the children's view, playful approaches contribute to their coping with cancer treatment. **Method:** this qualitative, descriptive, exploratory study involved semi-structured interviews of ten children between 6 and 12 years old. Content analysis was used to analyze the information obtained. **Results:** two categories emerged: the meaning of play as understood by children undergoing cancer treatment; and the feelings revealed through play during cancer treatment. The children said they thought it important to play during treatment and recognized that, when playing, they experienced a variety of feelings, such as happiness and well-being, but also anger at feeling pain due to the condition of being ill. **Conclusion:** playful approaches are essential tools for helping children in the various different situations they experience in their illness and treatment.

Descriptors: Pediatrics; Pediatric Nursing; Childhood; Play therapy; Oncology.

RESUMO

Objetivo: demonstrar como, na percepção da criança acometida por câncer, as abordagens lúdicas contribuem para que ela enfrente o tratamento oncológico. **Método:** trata-se de um estudo qualitativo, descritivo e exploratório. Procedeu-se à entrevista semiestruturada com dez crianças com idades entre 6 e 12 anos acolhidas em uma casa de apoio. Para analisar as informações, optou-se pela técnica de análise de conteúdo. **Resultados:** emergiram duas categorias: o significado de brincar na compreensão da criança em tratamento oncológico; os sentimentos revelados a partir do brincar durante o tratamento oncológico. As crianças disseram que acham importante brincar durante o tratamento e reconhecem que, ao brincar, vivenciam uma variedade de sentimentos, como felicidade e bem-estar, mas também raiva por sentir dor devido à condição de estar doente. **Conclusão:** as abordagens lúdicas são ferramentas essenciais para auxiliar a criança a vivenciar as diferentes situações na doença e no tratamento.

Descritores: Pediatria; Enfermagem Pediátrica; Criança Ludoterapia; Oncologia.

RESUMEN

Objetivo: demostrar cómo, desde el punto de vista de los niños, los enfoques lúdicos contribuyen a hacer frente al tratamiento del cáncer. **Método:** este estudio cualitativo, descriptivo y exploratorio involucró entrevistas semiestructuradas a diez niños de entre 6 y 12 años. Se utilizó el análisis de contenido para analizar la información obtenida. **Resultados:** surgieron dos categorías: el significado del juego tal como lo entienden los niños en tratamiento contra el cáncer; y los sentimientos revelados a través del juego durante el tratamiento del cáncer. Los niños dijeron que les parecía importante jugar durante el tratamiento y reconocieron que, al jugar, experimentaban una variedad de sentimientos, como felicidad y bienestar, pero también ira al sentir dolor debido a la condición de estar enfermo. **Conclusión:** los enfoques lúdicos son herramientas esenciales para ayudar a los niños en las diferentes situaciones que experimentan en su enfermedad y tratamiento.

Descriptorios: Pediatría; Enfermería Pediátrica; Niño; Ludoterapia; Oncología.

INTRODUCTION

Cancer is considered the leading cause of death in the age group from 1 to 19 years old, and represents 8% of the total deaths in this life period. Due to the significant evolution in the therapeutic modalities over the last four decades, today, approximately 80% of the children and adolescents affected by the disease can be cured, if diagnosed early and treated in specialized centers¹.

After the diagnosis, children start to be subjected to various procedures, such as examinations, invasive procedures, chemotherapy, radiotherapy, and surgery, among others, and are left with physical, social and emotional limitations^{2,3}. Consequently, they will feel the impact of cancer, as this affects their schooling, which is interrupted, as well as their social and family co-living. All these aspects can interfere with their aptitude and willingness to play⁴.

For this reason, it is fundamental that they can benefit from instruments that they master and know so as to adapt to this new situation. It is in this perspective that ludic activities are seen as capable of providing pleasure and happiness, as well as rescuing the essence of children in this care process. In this way, when playing, children can face stressful situations, such as cancer and its treatment⁵.

Etymologically, the word ludic derives from the Latin *'ludus'*, meaning happiness and freedom, commonly present in child games. When these activities are adequately applied, they can contribute with the cognitive, affective, motor, social and communication discoveries necessary for children with cancer⁶.

The indispensability of having fun must not be eliminated during illness and treatment, since fun allows the expression of feelings, preferences, fears and habits from its projection and transference to the characters of the game, creating a make-believe story. Therefore, the ludic provides children with a more pleasurable way of living a new routine, until then unknown to them, and prevents the experience of having cancer from being tied only to negative feelings^{7,8}.

It is in this perspective that the need for the therapeutic game is inserted, helping children to face a disease as complex as cancer. The acts of playing, painting, singing and dancing, that is, making the child perform during treatment the activities that are common and routine for them, can result in the reduction of the stress, anguish and fear associated with the disease, the treatment and the procedures performed by the health team, transforming their perception about the disease and the treatment⁹.

In this scenario, ludic approaches, when properly employed, are important because they can lead children to find a reason to smile, giving them a voice to express themselves through the act of playing and manifest their feelings acquired in the therapeutic process. In this way, the aforementioned approaches contribute to a much better understanding of how this resource can contribute to coping with the oncological treatment.

In view of the above, this study aimed to show how, in the children's perception, ludic approaches help them to cope with the oncological treatment.

METHOD

A descriptive and exploratory study with a qualitative approach, carried out at *Casa de Apoio à Criança com Câncer* (Support House for Children with Cancer), located in the municipality of João Pessoa, PB – Brazil, a place that offers lodging with food and transportation to the hospital, recreational activities and workshops for the children and their accompanying family members.

The study population consisted of 26 children undergoing outpatient oncological treatment, who were lodged in this place from August to September 2018, when data was collected. The following inclusion criteria were adopted to select the sample: the possible participants belonging to the age group between 6 and 19 years old, and having their parents' consent to participate in the study. And the exclusion criterion was the following: children who were in isolation due to immunological impairment related to the toxicity associated with the side effects of the treatment were exempted. The sample was composed by accessibility and consisted of ten children. Initially, as the sample size was not defined, the data saturation criterion was employed: saturation occurs when the repetition of the information obtained in the speeches of the participating children is verified.

Data was collected in two stages. In the first, the sample was selected intentionally and assisted by the *Casa de Apoio à Criança com Câncer* team, which indicated possible participants according to the aforementioned criteria. In the medical chart, the age, type of cancer, parents' names and the general condition of the child were searched. Initially, the researcher contacted the child's parents to inform them about the study and request authorization for the child to participate, by signing the Free and Informed Consent Form, and the Free and Informed Assent Form for the children, safeguarding, however, the right to deny participation in the study. All of them allowed the participation of their children.

In the second stage, each child was approached individually and invited to participate in the interview, which took place in a playroom at the support house, as it is a reserved space where the child answered the following questions: What is playing? What is the importance of playing? Which are the games you usually play after you are ill? What do children feel when they are playing? It was also investigated which games they usually play when they are in the hospital and in the support house.

The interview lasted a mean of thirty minutes. The statements were recorded with the technological help of an MP3 player and identified by the letter C, related to the word child, in order to preserve the anonymity of the interviewees.

The data obtained from the interviews were submitted to the Content Analysis technique, following these steps: organization and transcription of the speeches; in-depth reading of the interviews; identification and categorization of the significant nuclei; inference of the results and interpretation of the data based on the theoretical foundation¹⁰.

In compliance with Resolution No. 466/2012 of the National Health Council (*Conselho Nacional de Saúde*, CNS), data was only collected after receiving the certificate of approval by the Ethics Committee of the Higher Education Institute of Paraíba (*Instituto de Educação Superior da Paraíba*, IESP), under opinion number: 2,759,893¹¹.

RESULTS

All the children interviewed have permanent residence in the inland of Paraíba, because the place selected for the study receives children and their relatives who live in distant places of the municipality where the reference hospital for oncopediatric treatment is located. Figure 1 shows the characterization of the study participants.

Code	Age	Gender	Time of treatment	Type of cancer	Type of treatment	School attendance
C1	7 years old	M	More than 1 year	Langerhans cell histiocytosis	Chemotherapy	Yes
C2	6 years old	M	Less than 6 months	Not identified in the medical chart	Chemotherapy	When released by the physician
C3	8 years old	M	More than 1 year	Lymphoma	Chemotherapy	No
C4	11 years old	F	Between 6 months and 1 year	Leukemia	Chemotherapy	Yes
C5	12 years old	M	Between 6 months and 1 year	Neuroblastoma	Chemotherapy	No
C6	9 years old	M	More than 1 year	Brain tumor	Radiotherapy	No
C7	12 years old	M	More than 1 year	Leukemia	Chemotherapy	No
C8	12 years old	M	Between 6 months and 1 year	Sarcoma	Chemotherapy	No
C9	9 years old	M	More than 1 year	Leukemia	Chemotherapy	No
C10	11 years old	M	Between 6 months and 1 year	Leukemia	Chemotherapy	No

FIGURE 1: Characterization of the children participating in the study (n=10). João Pessoa, PB, Brazil, 2020.

The study participants were 10 children, aged between 6 and 12 years old, and most of them undergoing chemotherapy. During treatment time, which ranged from less than six months to more than one year and seven months, the children were not attending school.

After analyzing the speeches of the study participants, it was possible to understand how the ludic approaches contributed for the children to face the oncological treatment, according to what is presented in Categories 1 and 2.

Category 1: The meaning of playing in the understanding of children undergoing oncological treatment

In this category, it was verified that games mean that the children are not completely deprived of an activity that is naturally part of their daily lives. For them, games are associated with fun, according to these speeches:

For me, playing is to have fun (C2, 6 years old).

Playing is having fun (C5, 12 years old).

It is fun to kill time (C8, 12 years old).

It is perceived that, in the children's understanding, playing during treatment is considered important so that the moment is not permeated only by seriousness and idleness, as expressed by C2, C4 and C6:

I think playing is important, so as not to take everything so seriously (C2, 6 years old).

I think it's important, why not play if you're not going to raise a child trapped like an animal in a cage (C4, 11 years old).

It's important, because it's relaxing, better than doing nothing (C6, 9 years old).

The speech of C4 clearly expresses that, when playing, the child experiences the feeling of freedom, since not playing, in her understanding, means "being trapped like an animal in a cage".

Despite the importance children give to playing during the treatment of the disease, the statements below demonstrate certain shortage of these activities while they are in the hospital, as stated by C1 and C4:

I didn't play anything at the hospital, but I wanted to, because it would be more fun. The only thing I played there was with that iron thing that supports saline solution, I got out of bed and pretended I was skateboarding, that gave me joy (C1, 7 years old).

Playing in the playroom is the only game there (C4, 11 years old).

The fact that the ludic activities are not performed systematically during hospitalization can contribute to the use of technological resources as a way of passing the time:

I don't play anything when I'm there, I just keep using the cell phone (C8, 12 years old).

There's no game in there, I play on the mobile phone and sometimes the clowns go there just to give us gifts (C5, 12 years old).

When the games are not planned according to the patient's age group, they may not be considered attractive, as expressed in C10.

I only play on my cell phone, I don't like clowns, I'm old to find this funny (C10, 11 years old).

The observance of a wider range of games performed with the children during their stay in the Support House is pointed out as follows:

Sometimes I play with the hula hoop and with a car with the boys that are here (C2, 6 years old).

I play with ball, cart, catcher, and with the ladies that come here (C4, 11 years old).

I like to play on my cell phone, card decks and with a girl or a lady who comes here (C10, 11 years old).

When asked about their interest in the games they play at the Support House, where they stay during treatment, some children showed lack of interest in the activities, such as C3 and C10:

No, I don't like to play, I play sometimes when the clowns come, but only sometimes (C3, 8 years old).

I don't play much, just once in a while, what I really like is to ride a horse (C10, 11 years old).

The experience of such a complex illness during childhood demands early maturation in children, and they begin to understand the need to adjust their daily life. This fact is demonstrated when they say that they are afraid of getting hurt and worsening the disease, as these testimonies show:

I play almost every game except with a sword that can hit my head and I could get worse (C6, 9 years old).

It's more or less important, due to the "mode" of the disease, because if I'm sick and go to play, it gets more serious (C8, 12 years old).

Category 2: The feelings revealed from playing during the oncological treatment

This category expresses the children's speeches and reflects their perception of the various feelings experienced from their participation in the ludic activities performed during the treatment. In this sense, it was observed that the majority expressed positive feelings during their involvement in the games.

For some children, the feelings expressed when playing are joy and happiness, and can even momentarily allow them to forget about the events associated with the disease, as described below:

I feel happy [...] I found that I was better when I played (C1, 7 years old).

I feel fine and happy, it makes me forget a little what is happening (C2, 6 years old).

I'm happy and angry when I'm losing (C8, 12 years old).

Fun (C7, 12 years old).

But, depending on the stage of treatment, some children showed that they are afraid to participate in the activities because they can feel pain and the disease could get worse.

I feel tired and feel pain when I play a lot (C6, 9 years old).

I feel pain and it makes me angry to feel pain (C9, 9 years old).

According to the reports by C6 and C9, pain is a frequent sensation in patients affected by cancer, and can even cause a feeling of anger, as expressed by C9.

For the children who were momentarily unable to participate in more dynamic activities such as running, the fact that they were able to do this movement again rescued the feeling of happiness and contributed to the child's perspective not being focused only on the consequences associated with treatment such as alopecia, for example.

Yes, because I couldn't walk and when I could walk I saw that it's important to play and I was happy (C4, 11 years old).

Hum hum...because it brought joy and I can run, it made me forget that I'm bald (C6, 9 years old).

However, it was noticed that fear is a feeling that can also be experienced, because some children believe that playing during treatment does not help them to improve; on the contrary, they think that playing makes the disease worse.

No, because I get worse when I play (C8, 12 years old).

No, playing doesn't make me forget (C5, 12 years old).

I don't feel any improvement, I don't like playing (C3, 8 years old).

It doesn't help! My mom reminds me of the medications, she's afraid that I get worse (C9, 9 years old).

DISCUSSION

The study showed that playing is a way to bring fun to a new routine modified as a result of the limitations imposed by cancer to the children who are in the support house for clinical treatment, being characterized as a modifier event of the “being a child” routine. It was verified that the ludic approaches are an important tool to cope with childhood cancer, because they provide joyful and fun moments.

Playing has an important therapeutic value for children with cancer, because it provides them with physical and emotional well-being and, consequently, helps them to recover¹².

The study indicated that the children participating in this research understand that playing is very important, especially because it provides a momentary distraction that makes them forget about the disease, and that it is a resource that helps them pass the time while they are idle in the support house. This finding is similar to the results obtained through the report of children who associate playing with something that makes them happy⁴.

Thus, playing is very important in children's development and collaborates to the apprehension of behaviors and to the construction of knowledge about the reality in which the child is inserted, such as expression of feelings and emotions. Considering that children affected by cancer present changes in their organic and psychosocial form, playing can reduce anxiety and fear in the face of the unknown^{13,14}.

The ludic approaches bring to children a moment of their own, in which they can discover the world with their imagination and games, forget about the real world, and take hold of their make-believe, bringing to themselves a reality that they create, making that moment of treatment bring a reason to smile^{15,16}.

It was possible to identify that children perceive the importance of playing to face cancer diagnosis and treatment. However, it is essential that the health professionals involved in care recognize the potential of the ludic approaches to demystify the idea that the oncological treatment is only a period of suffering and pain, and they can even be used as a resource to prepare the child to undergo procedures such as biopsy, venipuncture and probing, among others, which were not part of the child's universe before the diagnosis^{17,18}.

In addition, although it is important to maintain the games in the children's routine, their speeches indicated that the treatment period is a limited universe of games, because few activities were reported during this time, especially during the stay in the hospital environment. Among the factors associated with the scarcity of games, the workload imposed on the health team stands out, but these professionals need to be aware of the many possibilities that playing can offer, both to them and to the child. So, despite the overload, it is important to include conversations, storytelling and games in assisting the child undergoing oncological treatment¹⁹.

In this scenario, the Nursing team stands out, for being present in the day to day of the child in diverse care actions such as feeding, hygiene, administration of medications, collection of material for exams, etc. However, in addition to prioritizing the management of the disease, one should not forget to include games in this context, because they provide humanized assistance, in order to fully attend to the child²⁰.

It is understandable that, due to the disease, the ludic activities performed with these children during cancer treatment require adaptation, and those that stood out among the participants were the following: playroom, raffles, visit of “volunteer” clowns, using the support of the saline solution as a skateboard, and using the mobile phone. A research study points out the playroom as the main playground used by children with cancer and highlights the potential of the space by enabling children to express their emotions and learn a new way of playing compatible with their current health condition⁴.

When children are welcomed at the Support House, they can play with a hula hoop, a car, run and catch and with card decks, and can also use their cell phones to have fun. As these activities provide bonding and strengthening of friendship among children, they feel like playing, and this is reflected in more fun and joyful moments.

Games such as hula hoop and run and catch encourage the children to be active and act as coadjuvants to combat comorbidities associated with physical inactivity, such as childhood obesity, cardiovascular diseases and diabetes²¹. However, one of the items that stood out among the children was the use of the cell phone, employed as an electronic resource as a form of entertainment, but which contributes to diminishing group play and, consequently, interaction among the children. In this regard, a study conducted with 4,500 American children, aged between 8 and 11 years old, pointed out that the use of electronic devices such as cell phones, tablets and computers for more than two hours a day impairs the child's cognitive development, and that prolonged use can compromise sleep, studies or personal face-to-face interactions²².

It is important to emphasize that, as the disease causes early maturation in the child, some consider their participation in certain activities because they believe that they can evolve to make the disease worse because of some more dynamic games that can generate impact. This is understandable, since the difficult routine of children with cancer can cause limitations, physical and psychological disabilities, and interfere with their ability and desire to play⁹.

Regarding the expression of feelings, when they participate in the games, happiness, joy and feeling good were highlighted. Playing was also mentioned as a resource not to take everything seriously and to help forget about reality, that is, the fact of having cancer. Attesting to these results, some authors point out the development of creativity as one of the main benefits of ludic approaches during treatment, because the infants use them to create their make-believe and their world, and this makes all that reality gain a little joy and fun^{23,24}.

It was also observed that the children are afraid to feel pain and to get worse from playing. However, it is understandable that illness and treatment trigger feelings of anxiety and fear, especially that of feeling pain²⁵. Anger was also among the feelings mentioned about wanting to play and not being able to because of the sensation of pain. It is worth emphasizing that the experience of the disease is painful for the child who could jump and run without any discomfort before, which can generate a negative feeling associated with anger^{26,27}.

The results of this study can help health professionals, family members and volunteers, herein represented by professors and students from the Graduate Nursing Course who develop an extension project with these children, to reflect on the need to include games in the daily lives of children undergoing cancer treatment. Playing helps reduce the stress, anxiety and discomfort generated by the disease and can help them socialize with other children, the health professional, the support house staff and the family.

In this sense, playing is now seen as a therapeutic space, which may not only promote the sequence of child development, but also enable the children to understand the specific moment they are experiencing. Playing is a universal language through which children express themselves. A proper connection between playing and facing the diverse aspects of life can help children develop and become more resilient when facing adversities²⁸.

CONCLUSION

It was verified that, when the children were playing, they forgot for a moment that they had cancer, because playing awakens feelings of happiness and well-being. However, fear was also present, because some children associated it with the risk of worsening the disease. Anger was also mentioned for feeling pain while playing.

As for the activities carried out, although a variety of them were offered, some children participating in this research preferred using their cell phones to distract themselves, which can interfere with the interaction with other individuals present in the environment.

Finally, it should be noted that, as this research was restricted to the support house, most of the results obtained were limited. Therefore, it is recommended that new studies be produced to investigate ludic approaches in the care of children with cancer.

REFERENCES

1. Ministério da Saúde (BR), Instituto Nacional do Câncer. Câncer infantojuvenil – versão para profissionais de saúde [internet]. Rio de Janeiro: INCA; 2020 [cited 2020 July 15]. Available from: <https://www.inca.gov.br/tipos-de-cancer/cancer-infantojuvenil/profissional-de-saude>.
2. Sultan S, Leclair T, Rondeau E, Burns W, Abate C. A systematic review on factors and consequences of parental distress as related to childhood cancer. *European Journal of Cancer Care* [internet], 2016 [cited 2020 Jan 15]; 25: 616-37. DOI: <https://doi.org/10.1111/ecc.12361>.
3. Silva PLN, Xavier GC, Oliveira VV, Figueiredo ML, Prado PF, Filho WA. Childhood cancer: experiences of children in treatment oncologic. *Enferm. Foco* [internet], 2016 [cited 2020 Jan 15]; 7(3/4):51-5. Available from: <http://revista.cofen.gov.br/index.php/enfermagem/article/view/916/346>.
4. Silva LF, Cabral IE. Rescuing the pleasure of playing of child with cancer in a hospital setting. *Rev. Bras. Enferm.* [internet], 2015 [cited 2020 Jan 15]; 68(3):337-42. DOI: <http://dx.doi.org/10.1590/0034-7167.2015680303i>.
5. Sposito AMP, Schinzari NRG, Mitre RMA, Pfeifer LI, Lima RAG, Nascimento LC. The best of hospitalization: contributions of playing to cope with chemotherapy. *Av Enferm.* [internet], 2018 [cited 2020 Jun 20]; 36(3):328-37. DOI: <https://doi.org/10.15446/av.enferm.v36n3.61319>.
6. Santos SS, Alves ABSA, Oliveira JC, Gomes A, Maia LFS. Ludoterapia as a tool in humanized nursing care. *Recien* [internet]. 2017 [cited 2020 Jan 15]; 7(21):30. DOI: <https://doi.org/10.24276/rrecien2358-3088.2017.7.21.30-40>.

7. Marques EP, Garcia TMB, Anders JC, Luz JH, Rocha PK, Souza S. Playful activities in health care for children and adolescents with cancer: the perspectives of the nursing staff. *Esc. Anna Nery*. [internet], 2016 [cited 2020 Jun 20]; 20(3):e20160073. Available from: https://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-81452016000300218&lng=en&tlng=en.
8. Silva LAGP, Baran FDP, Mercês NNA. Music in the care of children and adolescents with cancer: integrative review. *Texto Contexto Enferm*. [internet], 2016 [cited 2020 Jun 20]; 25(4):E1720015. DOI: <https://doi.org/10.1590/0104-07072016001720015>.
9. Del Pino C, Pereira VT. Ludoterapia durante o tratamento contra o câncer infantil: revisão integrativa de literatura. *Rev. Psicol. Foco* [internet], 2017 [cited 2020 fev 15]; 9(14):26-44. Available from: <http://revistas.fw.uri.br/index.php/psicologiaemfoco/article/view/2132/2488>.
10. Bardin L. Análise de conteúdo. Lisboa: Edições 70, 2016.
11. Ministério da Saúde (BR), Conselho Nacional de Saúde. Resolução nº 466/2012. Trata de pesquisas em seres humanos [Internet]. Brasília: Ministério da Saúde; 2012 [cited 2019 June 15]. Available from: <http://conselho.saude.gov.br/resolucoes/2012/Reso466.pdf>.
12. Koukourikos K, Tzeha L, Pantelidou P, Tsaloglidou A. The importance of play during hospitalization of children. *Mater Sociomed*. [internet], 2015 [cited 2020 Nov 07]; 27(6):438-441 Available from: <https://pubmed.ncbi.nlm.nih.gov/26889107/>.
13. França JRF, Costa SFG, Lopes MEL, Nóbrega MML, Batista PSS, Oliveira RC. Existential experience of children with cancer under palliative care. *Rev Bras Enferm* [Internet], 2018 [cited 2020 Jun 27]; 71(Suppl 3):1320-7. DOI: <http://dx.doi.org/10.1590/0034-7167-2016-0493>.
14. Lima MS, Barbosa FAS, Monteiro LM. The importance of ludic to hospitalized children: Integrative review. *Reon Facema* [internet], 2015 [cited 2020 Fev 15]; 1(2):139-142. Available from: <https://www.facema.edu.br/ojs/index.php/ReOnFacema/article/view/54/35>.
15. Batagliion GA, Marinho A. Family members of children with disabilities: perceptions regarding playful activities in rehabilitation. *Ciênc saúde coletiva* [internet], 2016 [cited 2020 Fev 15]; 21(10):3101-10. DOI: <https://doi.org/10.1590/1413-812320152110.19232016>.
16. Carvalho TGP, Santos ARM, Silva ML, Leonídio ACR, Silva PPC, Caminha IO et al. O olhar do paciente sobre o câncer infantojuvenil e sua percepção acerca de seus sentimentos e emoções diante do videogame ativo. *Movimento* [internet], 2018 [cited 2020 Fev 15]; 24(2):413-26. DOI: <http://dx.doi.org/10.22456/1982-8918.72695>.
17. Dias PLM, Silva IP. The use of the toy during the treatment of children with cancer: perceptions of the multidisciplinary team. *Rev. Bras. Cancerol.* [internet], 2018 [cited 2020 Fev 15]; 64(3):311-8. DOI: <https://doi.org/10.32635/2176-9745.RBC.2018v64n3.28>.
18. Gomes AS, Ribeiro GP, Lima LS, Ferreira ES. Contribuição do brinquedo terapêutico na interação entre a criança, a família e a equipe de enfermagem. *Rev. Enferm. Integrada*. [internet], 2015 [cited 2020 Nov 07]; 8(2). Available from: <http://www.unilestemg.br/enfermagemintegrada>.
19. Freitas JAL, Oliveira BLG. Psychological aspects involved in the survival of childhood cancer. *Revista Uningá* [internet], 2018 [cited 2020 Fev 20]; 55(2):1-13. Available from: <http://revista.uninga.br/index.php/uninga/article/view/76>.
20. Vieira APMS, Castro DL, Coutinho MS. Assistência de enfermagem na oncologia pediátrica. *Rev. Eletrôn Atualiza Saúde* [internet], 2016 [cited 2020 Nov 07]; 3(3):67-75. Available from: <http://atualizarevista.com.br/wp-content/uploads/2016/01/Assist%C3%Aancia-de-enfermagem-na-oncologia-pedi%C3%A1trica-v-3-n-3.pdf>.
21. Truelove S, Vanderloo LM, Tucker P. Defining and measuring active play among young children: a systematic review. *J. Phys. Act. Health* 2017 [cited 2020 Nov 07]; 14(2):155-66. DOI: <https://doi.org/10.1123/jpah.2016-0195>.
22. Ashton JJ, Beattie RM. Screen time in children and adolescents: is there evidence to guide parents and policy? *The Lancet Child & Adolescent Health* [internet], 2019 Mar [cited 2020 Nov 07]; 3(5):292-4. DOI: [https://doi.org/10.1016/S2352-4642\(19\)30062-8](https://doi.org/10.1016/S2352-4642(19)30062-8).
23. Pagung LB. Estratégias de enfrentamento e otimismo de crianças com câncer e crianças sem câncer. *Rev. Psicol. Saúde* [internet], 2017 [cited 2020 Jul 15]; 9(3):33-46. DOI: <http://dx.doi.org/10.20435/pssa.v9i3.470>.
24. Barros LF, Santos CJO, Moro TNP, Jeus VMF. Quality of life and cancer children and youth. *Rev. Rede cuid. saúde* [internet]. 2017 [cited 2019 June 15]; 10(1):1-13. Available from: <http://publicacoes.unigranrio.edu.br/index.php/rccs/article/view/3125/2202>.
25. Fontes CMB, Oliveira ASS, Toso AL. Therapeutic toy in pediatric intensive therapy unit. *Rev. enferm. UFPE on line*. [internet], 2017 [cited 2020 Jul 15]; 11(supl. 7):2907-15. Available from: <https://periodicos.ufpe.br/revistas/revistaenfermagem/article/view/9518>.
26. Caprini FR, Motta AB. Childhood cancer: diagnosis impact analysis. *Psicol. rev.* [internet], 2017 [cited 2020 Jul 15]; 19(2):177-189. DOI: <http://dx.doi.org/10.5935/1980-6906>.
27. Negreiros RV, Furtado IS, Vasconcelos CRP, Souza LSB, Vilar MMG, Alves RF. A importância do apoio familiar para a eficácia no tratamento do câncer infantil uma vivência hospitalar. *Rev. Saúde Colet.* [internet], 2017 [cited 2020 Fev 15]; 6(2):57-64. Available from: <https://docplayer.com.br/72630995>.
28. Capurso M, Ragni B. Bridge over troubled water: perspective connections between coping and play in children. *Front Psychol*. [internet], 2016 [cited 2020 Nov 07]; 7:1953. DOI: <https://doi.org/10.3389/fpsyg.2016.01953>.