Review Article

Integrative Pediatrics and Child Care Play as a Source of Psychological Well-Being for Hospitalized Children: Study Review

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Abstract

This work contains a narrative review of the effects of different types of play in the well-being of hospitalized children. For this purpose, the literature highlighting the evidence that supports the use of different types of play to improve children's hospitalization experience was analyzed. These types of play are medical games, playing with dolls, puppets, or marionettes, playing with pets, and digital or video-games. All of them can improve children's experience of hospitalization. Despite everything, children can play a lot of things in the hospital, and recreational resources make important contributions to hospitalized children's well-being. Play is children's right, also in the hospital, and is a particularly important resource to improve the care that pediatric patients receive in health institutions.

Play is a Children's Right and a Health Resource

Play is expressly recognized as a right of children by the international organizations responsible for children's protection. In Article 31 of the Convention on the Rights of the Child of United Nations, play is considered as a right and, in the European Charter of Hospitalized Children, the right of hospitalized children to have their educational and play needs addressed, and the right to have appropriate toys for their age during their stay in hospital is explicitly stated.

Play is essential to development because play contributes to the cognitive, physical, social, and emotional well-being of children and youngsters [1]. In children, the relationship between play and health is especially relevant. For children "to be well" means "to be able to play" [2]. In practice, for them, playing is synonymous with health and well-being. The idea that children need to play in hospitals and other health care contexts is not new. Since the end of the 19th century,

humanitarian organizations have developed programs to support hospitalized children in which play, stories, and similar activities were proposed as systems to help sick children [3]. What is new is considering play as an essential part of children's healthcare in hospitals. For hospitalized children, play can be a powerful tool to reduce their tension, anger, frustration, conflict, and anxiety [4-6], to improve their coping and mastery capacities, and their feelings of control and their cooperation and communication with the clinical staff [7]. After their review of the literature on the therapeutic effect of the play in hospitalized children, Rae and Sullivan [8] concluded that play programs for hospitalized children were effective in the reduction of children's hospital-related anxiety and fear, prevention of anxiety, improvement of self-esteem, and reduction of behaviors that indicate stress. Play can help children to gain control, express feelings of anxiety, obtain information about hospital procedures, prepare for medical events, and transform the children from passive sufferers into active agents of their own care [9].

Several studies have pointed out the potential benefits

of play for the care of hospitalized children. Rae et al. [9] conducted a study designed to assess the effect on the psychosocial adjustment of hospitalized children of different types of verbal support and play, comparing four intervention levels: a) standard care without any special intervention; b) play activities (normal games like puzzles, card games, etc.; c) discussion and information without play; and d) play therapy, consisting of undirected play that included a reflection and interpretation of the children's feelings about their experience in the hospital. When comparing the results of the four conditions, it was observed that the patients who had participated in the child-centered undirected therapeutic play sessions showed a significant reduction of self-reported fear of the hospital. Ullán et al. [10] carried out a study to verify the effect of a program for the promotion of play in the hospital on pediatric postoperative pain. The research hypothesis was that children would express less pain if they were distracted by playing during the postoperative period, after recovering from the anesthesia. To test this hypothesis, a randomized parallel trial with two groups, an experimental group and a control group, was carried out. The control group received routine care in the hospital. The parents of the children in the experimental group were instructed to play with their children in the postoperative period, and specific play material was provided for this purpose (a cloth rabbit dressed like a doctor). The patients were randomly assigned either to the experimental group or the control group. Three pain measures were taken at one-hour intervals. The results indicated that in the three measures of pain carried out, the mean of the experimental group was lower than that of the control group. The children in the experimental group in general obtained a lower pain score than the children in the control group.

The ability of play to reduce anxiety and negative emotions of hospitalized children has been analyzed. In a quasi-experimental study [11] attempted to confirm the hypothesis that, if children received interventions based on play during their hospital stay, they would exhibit fewer negative emotions and lower anxiety levels compared with children who received the usual care. Children in the control group received standard medical treatment and nursing while in the hospital, whereas the experimental group received play interventions, developed by a play specialist in the hospital for 30 minutes each day during their stay. These interventions were activities designed to psychologically prepare children for hospitalization according to their levels of psychological and cognitive development and their health problems. The study was

conducted in two public hospitals in Hong Kong, one assigned as the "control" hospital and the other as the "experimental" hospital. The analyses showed differences between these two groups, as the children who received the play intervention exhibited fewer negative emotional behaviors during hospitalization. In interviews with the children, many of them commented that playing had helped them to know more about medical procedures and to fear them less and the parents expressed similar ideas.

Among the kinds of play that have been most evaluated with regard to their impact on the well-being of hospitalized children and adolescents are medical games, playing with dolls or puppets, playing with pets, and digital games. In the following sections, we will review the available evidence supporting the use of these types of play to improve children's experience of hospitalization.

Play Modalities in Hospitals: Evidence of Their Impact on Children's Well-Being

Medical play

Medical play is a form of play that introduces medical issues as part of its content and/or the use of medical equipment [12]. In surgery, medical play has been used to facilitate the preparation for surgical interventions showing children the process to which they will be subjected and allowing them to play with the material to be used with them during anesthesia. William et al. [13] examined the effect of playing with medical material prior to surgical intervention in children who were to undergo an operation. The objectives of the study were to determine whether the children participating in play sessions in the operating area with medical material prior to the operation reported lower anxiety levels the day before and the day after surgery, exhibited fewer negative emotions during the induction of anesthesia, and reported less post-operative pain in comparison with school-age children who received the standard preparation for the operation. For this purpose, a randomized controlled design was conducted. The control group of children and their parents received the standard preparation for the operation. Those assigned to the experimental group received, in addition to the standard preparation, a session of playing with medical material a week before the operation. The analysis of the results showed a significant difference in the anxiety scores between the children in the control group and the experimental group, with lower anxiety levels in the latter. The same result was observed in the emotional manifestations during the induction of anesthesia: they

were significantly lower in the experimental group than in the control group. The mean differences in postoperative pain between the experimental group and the control did not reach statistical significance. The authors of the study concluded that introducing medical play in preparation for the operation benefited the children, reducing their anxiety and negative emotions during anesthesia induction.

Moore et al. [14] evaluated the effect of directed medical play on the pain and discomfort of burned children. Prior to their study, these authors carried out a review of the literature on medical play, identifying 9 studies that provided relevant empirical evidence on the therapeutic use of this type of play. The researchers found that anxiety decreased significantly in the groups that had been provided with some form of therapeutic medical play. They also found that children from the groups that carried out medical play activities significantly decreased behaviors of anger, increased cooperation, and reduced maladaptive post-hospitalization behaviors to a greater extent than the control groups. The parents of the intervention groups reported a significantly lower level of anxiety when they observed their children's preparation with medical play or when they had directly participated with them. With a single exception, the findings of these studies, both those related to the children's behaviour and to physiological indicators, were firmly in favor of the medical game.

Playing with dolls, puppets, and marionettes

Dolls of different types are a widely used play material, also in hospitals. Where there is a child, there is almost always a doll close by. Dolls in hospitals not only comply with the usual functions of providing opportunities for children's symbolic play. Puppets have also been used as material to prepare children for medical procedures, as initial mediators to establish links between children and the health staff, or as a resource to favor relaxation and laughter. Some hospitals use dolls representing the body outline, which the children personalize drawing particular features on the face, the clothing, etc. These dolls are used to explain medical content related to the children's health problems and explain the procedures they will be subjected to. Through the process of personalizing the dolls, useful information can be obtained about the child's perspective and the customization of the dolls contributes a special value to this play material for the children [15].

Puppets or marionettes are another special kind

of dolls, designed to simulate different behaviors and conversations. Playing with puppets [16] has been used in hospitals to help children deal with disease, reduce their emotional distress during medical procedures, and provide them with instructions about their healthcare. Puppets can star in stories in which children can participate actively providing interesting information about their concerns, their fears, or their views. Among the many kinds of marionettes and puppets available, hand puppets are especially useful in the hospital context because they are easy to use for children, who quickly learn to manage this kind of toy. Through them, children have fun, but also communicate actively with the environment, which can lead to a very important element in the quality of the psychological care provided to them. Sposito et al. [17] presented an experience using finger puppets as a play strategy to improve the interaction and communication with hospitalized 7- to 12-year-old children who had cancer. According to the authors, their study showed that this type of puppets is a resource that enriches the communication of children with cancer when used properly. The use of puppets gave the children the opportunity to express themselves more freely, and they could be used creatively depending on the children's level of emotional, cognitive, and motor development, respecting their autonomy and minimizing the hierarchical relationships between the children and the adults in hospital setting.

The work of Reid-Searl et al. [18] includes the perspective of the nursing personnel in the use of puppets in a hospital. They mention the following main uses of puppets for children in healthcare contexts: reducing the experience of fear and anxiety in the hospital, helping the children manage their illness, hospitalization and surgery, teaching them health promotion strategies, preparing them for surgery, educating them about different diseases and as a means to recognize, clarify and articulate their feelings. In addition, puppets can help children to express their emotions make decisions, react autonomously and thus gain control over situations that affect them. The puppets helped explain to the children what was happening to them. The puppets "asked" the nurses additional questions that reinforced the children's learning, and they also helped the children to retain the information. They were also used to play with the children and distract them during unpleasant procedures. In addition, the use of puppets helped break down barriers not only with the child, but also with the siblings and parents.

Playing with pets in the hospital

Another game that is beginning to be used as a measure of support for hospitalized children is playing with pets, especially dogs. In recent decades, the assistance of animals in therapy, education, and care has increased markedly, and nowadays, the value of interventions assisted by animals (IAA) is widely recognized [19]. In hospitalized children, IAA has shown the capacity to improve mood and promote positive emotions [20]. Pet therapy provides additional support for these children. Kaminski et al. evaluated the effect of participation in activities with dogs in a group of children hospitalized for chronic diseases, mainly hematological and oncological diseases. Measures of the children's mood and their appraisal of the therapy were taken, and as well as the appraisal of their parents or caregivers. In addition, the children were videotaped while participating in activities with pets and, subsequently, from these recordings, the different kinds of affect manifested (positive, negative, or neutral) and the time they remained in each activity were appraised. Cortisol samples in saliva, a steroid associated with increased adrenocortical responses due to stress, were also taken prior to the play session with dogs and immediately afterwards. Other physiological measurements such as heart rate and blood pressure were also taken. The parents evaluated the level of well-being and happiness of the children. The results of this work, very frequently cited, indicated that, on average, both the children and the caregivers considered the experience of playing with pets positive. The children's mood improved with this activity, as evaluated by their parents. They considered that the children were happier after the play therapy with pets than with other play initiatives in the hospital. When the recordings of the children's moods were analyzed, it was observed that they expressed more positive moods while interacting with pets than during other play activities. The cortisol level was similar in those who played with dogs and in those who participated in other play activities, and in both groups, it decreased after the activities, although this reduction did not reach statistical significance. On average, the children and their parents or caregivers considered the experience of therapy with animals in the hospital to be positive.

Braun et al. [21] carried out the first study to analyze the relationship between IAA and the perception of pain in hospitalized children. They used a quasi-experimental design to assess the change in pain and in the vital signs in a group of children aged between 3 and 17 years. Some

of the children ($n = 18$) participated in IAA (experimental group), compared with another group ($n = 39$) which did not (control group). In both groups, the level of pain experienced by the children, their blood pressure, pulse, and respiratory rate were measured; in the experimental group, before and after a 15-20 min. session of playing with dogs, while in the control group, the same measures were taken with a similar time interval as the duration of the intervention with the dogs; that is, 15 minutes during which the researchers ensured that the children were in a quiet environment. In both groups, the self-reported pain measures were lower at post test, but the reduction of pain in the experimental group was significantly more intense than in the control group. This outcome was also observed in the parents' perception of their children's pain. In both groups, the parents perceived a reduction of pain, but in the experimental group, the reduction was significantly greater than in the control group. According to the authors, this study provides strong evidence that IAA can be an effective method to reduce children's pain. This reduction was four times higher in the children who participated in the IAA compared to the children in the control group, who were in a situation of calm and quiet for the same time interval.

In a similar vein, Vagnoli et al. [22] Investigated the effectiveness of IAA as a distraction to reduce children's pain and distress before, during, and after a standard procedure of venipuncture, which was done for the experimental group in the presence of a dog that had begun to interact with the child and his parents in the waiting room and that accompanied them while the extraction was performed. Throughout the process the child interacted with the dog, caressing it or brushing it, focusing on the dog. In the control group, the standard procedure was used without any dogs present. In both groups, the parents accompanied the children during the procedure. The children's distress was measured through an observational scale, as well as the pain reported by children, the levels of cortisol in blood, and the parents' anxiety during the procedure. The results indicated that the children's level of distress was significantly lower in the experimental group than in the control group before and during the blood extraction procedure, although the differences in this aspect after the procedure was over were not statistically significant. There were no differences between the two groups in the level of self-reported pain or in the parents' level of anxiety, but plasma cortisol levels were significantly lower in the experimental group than in the control group.

Digital games or video games

Digital games or video games require digital devices such as computers, tablets or mobiles [23]. A systematic review of the existing literature on game technologies for pediatric patients has been published. The objective of the review was to analyze prior research on technological games in hospital settings, in an attempt to learn more about which age groups are considered in the studies, in which procedures and/or pathologies technological games were applied, which specific technologies were used, the general purpose of each work, and, finally, the impact of the technological games on pediatric patients. Seventy-five relevant studies since 2001 were found and analyzed by date of publication. They clearly revealed an increasing tendency of this type of research, especially since 2010. The participating patients in most of the studies were children aged between 6 and 12 years, with few studies using preschoolers or adolescents. The analysis of the literature revealed that the game technologies had been applied mainly to children who suffered from some disease-69.3% of the studies-followed by 17.3% of the studies that used technological games before, during or after the administration of certain medical procedures, mainly blood extraction, anesthesia, minor surgery, and transplants. The authors analyzed in depth the intended outcomes for the pediatric patients in the reviewed works that used technological games. They identified the following goals: a) Distraction that is to provide through technological games, a kind of entertainment while the child is in the hospital or while some specific procedure is being applied, with the aim of reducing the child's stress. This purpose of using technological games was observed in 36% of the works. (b) Motivation, as some works used play as a motivator so the children would carry out some kind of physical or mental rehabilitation activity, and at the same time the game could allow the therapists to control the patients' progress. This purpose for technological games was observed in 42.6% of the works. (c) Socialization, because in some works, technological games were used to generate spaces of communication or socialization, either with other patients, with hospital workers, or with people from outside the hospital. This purpose was found in 18.7% of the works. (d) Education, referring to those cases in which information is provided either about hospital procedures or about the patients' illness through the game, or educational courses are provided or some way to connect the patients with their customary school to prevent hospitalization from leading to a delay in their studies. This purpose for the use of technological games was observed in 16% of the

examined works. (e) Emotional coping, referring to works dealing with providing, through technological games, a way for patients to cope with the negative emotions they may feel about the hospital. Only 1.33% of the works that used technological games had this purpose. In 64% of the studies reviewed, the effect of technological games in the hospital on one or more patient-related variables was assessed. The most analyzed variable was enjoyment (38.5%), but also a significant proportion of works dealt with the reduction of pain (31.2%), improved motor functions (28.2%), reduction of anxiety, discomfort or stress (14.4%), improvement of socialization (12.5%), and promotion of emotional expression (8.3%). It was observed that the hospitalized children enjoyed the technological games, and their socialization and emotional expression increased in more than 90% of the studies that analyzed these variables. In addition, in 80% of the works studying this issue, it was observed that the children improved their motor function, and in more than 70% of the studies that analyzed these variables, they successfully reduced their pain, anxiety, discomfort, and stress. From the review, it was concluded that the research of the implementation of technological games to promote the health and well-being of hospitalized children is an area of growing interest.

Conclusion: What is the Purpose of Play in the Hospital?

Play is a tool through which children give meaning to their world, develop new concepts, increase their social skills, obtain emotional support, and take on responsibilities for their actions through meaningful experiences [24]. Play can provide children, first of all, with pleasure. In fact, this function related to enjoyment is very often used to define the behaviour of play. A child is playing when he or she enjoys what he/she is doing. Play and enjoyment are not synonymous, but neither are they independent actions, instead, they share very relevant dimensions of meaning. Thus, play in the hospital serves to ensure that children enjoy themselves and improve their mood. Play also forms part of children's development. Through play, children can begin to master behaviors and cognitive, emotional, and social processes, so another function of play is to help drive children's development. Related to this, play can be an important source of learning through which children learn content, concepts, and alternative solutions to problems. Through play in the hospital, children can learn many aspects about their health care, better understand why they are in the hospital, the reason for the medical procedures they must undergo, discard misconceptions about what is happening, etc.

Play can also fulfil therapeutic functions [25] because it allows children to communicate their feelings effectively and naturally, and helps adults to know and understand the children's world. In addition, the pleasure provided by playing relaxes children and reduces their anxieties and fears. When playing, children may develop new social skills and assume new roles. In addition, play can be a source of flow experiences, hope, and resilience for children. The hospital may intimidate children and play in its various forms can be a good shield against perceived threats from the hospital environment (pain, discomfort, loneliness, boredom, etc.). Playing in the hospital is a very serious matter. It is not only a right of children, it is also a way to help them in their healing processes, to experience less pain, to feel more confidence and a better mood to better relate with health professionals, their family and also with themselves. Play should be part of the standard child care system in hospitals, because it is the right of children, as we have insisted but also because play is an especially important need when children's health problems force them to go to the hospital. Ensuring that children can play when they are in the hospital is a way of guaranteeing a basic dimension of psychological care. In addition, it does not require investing huge budgets in infrastructure or materials, but instead assuming that pediatric patients have special needs, a particular way of interpreting what is happening to them and that play should be part of their lives, also in the hospital.

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