

## Research Article

# Toy and Story for Therapeutic Play Sessions: The Elaboration

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### ABSTRACT

**Aim:** To describe the construction process of a toy and a story for use in a therapeutic play session involving children who are to be submitted to cardiac catheterization.

**Design:** Methodological development study.

**Methods:** The toys and stories were elaborated in the following phases: systematic observation of care delivered to children submitted to cardiac catheterization; semistructured interview with the team that works before, during and after the procedure; elaboration of the work plan to make the toy and planning to elaborate the story.

**Results:** The toy developed in this study consists of the following material: dolls, prototypes of angiograph, anesthesia device and multi-parameter monitor, hospital material for anesthesia and venipuncture. It serves to prepare children between three and ten years old who will be submitted to cardiac catheterization. The story is

based on the dialogue between the characters, permitting the construction of shared knowledge involving the child, family members and health professionals, through a playful approach that considers cognitive, procedural and attitudinal aspects.

**Conclusion:** It is recommended that technologies be developed with a playful approach and that health professionals be trained to use them in the context of child healthcare, aiming to support the coping with potentially threatening situations. In this research, the development process was outlined of a toy and story for use in a therapeutic play session, contributing to guide the elaboration of materials for this purpose, which is rare thus far in the literature.

**Keywords:** Child behavior; Nurse-patient interaction; Child nursing

### Introduction

The need to play continues, even when children get ill or are hospitalized. Children who are allowed to play may feel safer in the perioperative period, even in a strange environment [1]. The hospitalization and disease context by itself demands that the health professionals involved in the management of pediatric patients adopt therapeutic strategies, which include playing and toys [2]. This need becomes even more present at a high-complexity service like Hemodynamics, where cardiac catheterization procedures are performed. In this procedure, the child is confronted with an unknown, highly technological environment, which can cause fear, anxiety and negative behavior in response to the development of the procedure.

Preparation before the surgery can help the children and their relatives to reduce their anxiety, anguish and anger which, if not addressed, are associated with negative results, including the ineffective control of postoperative pain, sleep problems and delusion. Giving the children information appropriate to their

age before surgery can promote trust, reduce uncertainty, correct conceptions, increase self-efficacy and minimize anguish [3].

Most psychological interventions in the pediatric context use playful characteristics, in which the diversion function of the toy is extended to the possibility to elaborate feelings and learn new behaviors. Thus, the playful component of the procedure gains educative and therapeutic functions [4].

### Background

Playing is a form of language that facilitates expression and communication in the therapeutic space. It allows children to understand their situation and interact better with the context, thus favoring their wellbeing. Playing is important as a way for children to express themselves, develop their creative skills, interrelate, interact and use their imagination to dramatize a situation.

Imagination is considered a higher psychological function. Hence, when children dramatize something, they are neither

mechanically imitating nor simply reproducing a situation [5]. Through dramatization, the children have the opportunity to experience an imaginary situation, in which they can express the meanings they have internalized about situations of disease and hospitalization [6].

Using toys to prepare children who will be submitted to an invasive procedure offers advantages for the children, their families and the professionals as well: further approximation and mutual communication, better understanding of the technique and the need for interventions, relaxation of the tensions the procedures cause and better understanding of the meaning the children attribute to their experiences. In addition, the use of toys cheers up and makes the environment more relaxed and turns the time spent waiting for care more pleasant [6].

One branch of playing activities is the Therapeutic Play (TP), which offers structured play, in accordance with the principles of playful therapy and with specific objectives to be reached. The use of play permits the relief of the anxiety caused by experiences atypical of the children's age. These tend to be threatening and demand an intervention to enhance the coping of the child/family who will be submitted to an invasive procedure [7].

The storytelling strategy is another important communication tool in pediatric nursing, as it facilitates dialogue and relationship, broadens the diagnostic and therapeutic process and values the development process of the child, relatives and health team [8].

In a randomized controlled clinical trial involving 108 children between seven and 12 years of age, it was verified that the children who used TP in the preparation for elective surgery presented a lower level of anxiety and demonstrated less emotional discomfort during the anesthetic induction. Their parents reported greater satisfaction after the surgery [9].

In another clinical trial involving 95 children between six and 14 years of age, it was demonstrated that the use of TP is effective to reduce anxiety, negative emotional manifestations and postoperative pain intensity in children who are to be submitted to elective surgeries [10].

In a systematic review of clinical trials by Silva et al. [11], it was verified that, after the intervention using therapeutic play, the children in the experimental group presented lower levels of anxiety when compared to the children in the control group. Even in a study in which playful activities were used before the surgery, in a recreation room, it was verified that the children in the experimental group also presented lower levels of anxiety.

In a study of 304 hospitalized children between three and 12 years of age, it was observed that the children who participated in the interventions using therapeutic play presented less negative emotional behavior and lower levels of anxiety than the children who received the habitual care [12].

## Objective

The objective in this study was to describe the construction process of a toy and a story, to be used in a therapeutic play session with children who are to be submitted to cardiac catheterization.

## Method

A methodological development study was undertaken.

In methodological studies, the goal of the researcher is to elaborate a reliable, precise and usable instrument that other researchers and people can make use of. This study is suitable in any scientific discipline, as it deals with complex phenomena like individual behavior or health, which is the case in nursing research [13].

The toy and story were elaborated in the following phases: 1) systematic observation of care delivery to children submitted to cardiac catheterization, 2) semistructured interview with the team that works before, during and after the procedure 3) elaboration of a work plan to make the toy 4) planning to elaborate the story. Next, each phase is described:

### Phase 1: Systematic observation of care delivery to children submitted to cardiac catheterization

This phase was executed at the Interventional Radiology Sector of a teaching hospital in the city of Recife, a referral institute for the treatment of congenital cardiac conditions. The study was undertaken in March 2014.

Systematic observation was chosen because it allows the observer to approach the "subjects' perspective" by accompanying their daily experiences *in loco*, which allows him/her to apprehend the meaning they attribute to the surrounding reality and to their own actions [14].

For the purpose of the observations, a script was used that was elaborated based on the recommendations by Angrosino [15]. The observer should make organized field notes, including descriptions of the physical scenario and all material objects in it, describing the participants, behaviors and the interactions among them, as well as the timetable of the events [15].

The care delivered to four children between three and seven years of age was systematically observed, from their arrival to the service, through the accomplishment of the cardiac catheterization, until the discharge. The observation took place during four days at different times, permitting records of all professionals' actions who are serving on the team involved in this process (six nurses, two interventional cardiologists, three anesthetists, eight nursing technicians and three radiology technicians). During the observations, it was verified that all professionals developed standard procedures according to their function in the health team. Hence, based on the inclusion criteria, one professional from each function was randomly selected to participate in the interview, totaling five professionals.

### Phase 2: Semi-structured interview with the team working before, during and after the procedure

The interview was one of the techniques chosen to explore aspects that were considered relevant in the previous phase, being therefore a logical extension of the observation [15].

The interviews involved five professionals who are members of the Hemodynamics team, being: one nurse, one interventional cardiologist, one anesthetist, one nursing technician and one radiology technician. Their length of experience at the service ranged between four and nine years. The criteria to select the professionals were: professionals working more than two years at the service where the observation took place and active in care delivery to children submitted to cardiac catheterization.

To develop the interview, a script with semistructured questions was used for each professional to describe his/her situation as a member of the hemodynamics team before, during and after the procedure and what (s)he found important to discuss in the preparation of the child for the cardiac catheterization procedure. The researcher wrote down the answers, which were validated by the participants at the end of the interview, reading the records.

### **Phase 3: Elaboration of the work plan to make the toy**

The material to be used in the Therapeutic Play sessions was elaborated based on the recommendations by Ribeiro et al. [16], which recommend the manufacturing of figures representing the family and the health team, objects for professional and therapeutic use, puppets to perform the procedures and drawing and painting material and geometrical blocks. They should be manufactured using non-toxic and washable material and be appropriate to the age range.

The data collected during the systematic observation and semistructured interview with the professionals from the Hemodynamic Service were analyzed. These supported the construction of a plan of work, executed by a designer who is also an artisan, under the researcher's supervision. Initially, the characters and equipment to be elaborated were defined.

During the creation process of the puppets, it was considered that five puppets were needed to represent the professionals on the team (nurse, anesthetist, interventional cardiologist, nursing technician and radiology technician), which should be wearing a green coat, mask and cap; two puppets to represent the father and mother figure or the child's companion on the day of the procedure; and two puppets, a boy and a girl, representing the child to be submitted to cardiac catheterization. Among the equipment used during the cardiac catheterization, the angiograph, anesthetic device and heart monitor were indicated, with the respective photographic record, description of the specifications and relevant characteristics of each. In addition, a briefcase was requested to store the material.

To create the puppets, in contact with the artisan, the researcher described details of each character, such as size, hair color, clothes and accessories characterizing the professionals at the hemodynamics sector.

To approve the toy representing the angiograph, the artisan elaborated a graphic project displaying the screen of the monitors, the table to position the patient and the base surrounding the equipment, which was assessed and approved by the researcher. The final version of the toys resulted from a systematic dialogue between the artisan and the researcher.

### **Phase 4: Planning to elaborate the story**

The children can be informed about what they are going to see, hear, feel and smell before, during and after the surgery. When doing so, it is important to be true to them and, at the same time, as less frightening as possible, considering that, when they receive false information (e.g. that an injection will not hurt), they tend to be less trusting in the future. It is important to be open and honest to the children, providing information related to the surgery at a level appropriate for the age [3]. Therefore, the construction of a story to be used in a TP session should respect these recommendations.

In this study, the constructed toy will be used for instruction purposes; to advise the children about the procedure they will be submitted to (cardiac catheterization). This instruction will be based on the simulation of the situation the child will experience in the pre, trans and post-test phases. Therefore, it is recommended to use a story similar to that of the child, whose script addresses the need to undergo the procedure and its description. In that perspective, it is important to associate the use of the toy with an instruction script in the form of a children's story [16].

The elaboration of the children's story should comply with some requisites, such as: being capable of arousing the child's curiosity, stimulating his/her imagination and considering his/her anxieties and aspirations in view of difficult situations, problematizing them and presenting possible solutions [17]. In view of these requisites, the content of the story was elaborated, based on systematic observation by the researcher and the semi-structured interview with the professionals from the Hemodynamics Service.

Considering the collected data, the content was organized using objectives, elaborated according to the Taxonomy by Bloom [18], as described next: describe the child's preparation before the cardiac catheterization; describe the hemodynamics room where the exam takes place; simulate how the anesthetic induction process is done; simulate the venipuncture; explain how the cardiac catheterization takes place; simulate the withdrawal of the introducer after the end of the procedure; describe the rest time after the end of the procedure.

To support the elaboration of the story, using language that is clear and appropriate to the child audience, the researcher's experience in a pediatric humanization project was relevant, which involved storytelling at a teaching hospital, followed by experience as a nurse at a Hemodynamics Service. The researcher also read children's books and used the recommendations on how to write for children by Cowley [19].

Cowley [19] recommends that, when writing children's stories, the following premises should be considered: having a well-defined start, middle and end; establishing the main idea, the guideline of the story; the start should introduce the characters and scenario; being centered on the child, respecting the singularity of the characters and context; the plot can possess a simple cause-and-effect structure; the characters' discourse and action should be associated. From a grammatical viewpoint, the use of short verbs and phrases should be preferred; avoid the use of adverbs; use colloquial language appropriate to the age; include words that enchant the child; avoid rhymes and diminutives. All of these recommendations cooperate towards the construction of an interesting and emotionally supportive story.

## **Results**

The toy developed in this study consists of the following materials: puppets, prototype of an angiograph, prototype of an anesthetic device, hospital material for anesthesia and venipuncture. It serves to prepare children between three and ten years of age to be submitted to cardiac catheterization.

The characteristics of the puppets are similar to the characters

of the story they will be representing, being distributed as follows: seven puppets of 20 cm high, two representing a man and woman, who are the caregivers responsible for the child on the day of the procedure; five representing the team working in the preparation and execution of the cardiac catheterization (anesthetist, interventional cardiologist, nurse, nursing technician and radiology technician) and two of 15 cm high, showing a girl and a boy to represent the child.

The puppets were manufactured in 100% cotton, with silicon fiber (anti-allergic), hair made of cotton wool, sewn and fixed to the head using hot silicone glue. The feet are made of resistant plastic that maintains the flat shape, with filling that allows the puppets to remain standing without support. This characteristic facilitates the manipulation of the puppet while simulating the procedure with the child. The clothes were made out of 100% cotton fabric.

The masks and shoe covers, representing the individual protection equipment the professionals use, were made out of soft green TNT (non-woven tissue), sewn with elastic. The eyes are beads, sewn manually, eyelashes in black embroidery thread, and the mouths were embroidered in different colors. Accessories like glasses and earrings were made out of wire.

The prototype of the angiograph, which is the device used for the cardiac catheterization, was made out of milky white 9mm-acrylic, cut by laser. The angiograph monitor display cardiac catheterization images on photographic paper printed by laser and applied using transparent liquid resin to guarantee resistance to cleaning. The angiograph table was made out of milky white 6mm-acrylic. The table feet were also fixed with 9mm-acrylic, using specific glue for this material. Both feet are fixed to the MDF (Medium-Density Fiberboard) base, which is coated with white 6mm-vynil adhesive.

The anesthesia device was made out of 9mm-acrylic and has a multi-parameter monitor with images on photographic paper, printed by laser with resin application. These materials preserve the proportions in relation to the puppet size. The toy also includes hospital objects for anesthetic induction (mask, balloon and small trachea) and venipuncture (jelco, adhesive tape, cotton and tourniquet).

To store and transport this material, a briefcase was made out of MDF, coated on the outside with 100% cotton fabric. All of these materials can be cleaned and disinfected using 70% alcohol.

During the TP session, the toy will be used together with an instruction script in the form of a children's story, elaborated in Portuguese, entitled "The movie about Duda's heart", which tells the story of a child who was submitted to cardiac catheterization. If the child who participates in the research is a boy, the name Duda is replaced by Dudu in the title and throughout the story.

The story develops based on the dialogue among the characters (Mother, Child (Duda/Dudu), Nurse, Physician, Nursing and Radiology Technicians), in which the child, relatives and health professionals jointly construct knowledge through a playful approach that considers cognitive (understanding of the procedure), procedural (physical structure of hemodynamics

room and pre, trans and post-catheterization phases) and attitudinal aspects (behavior of the child/relatives).

The same story will be used for the age range from three to ten years, with language adaptations to further the child's understanding. The story specifically serves to prepare children who are to be submitted to cardiac catheterization. The protocol described can support health professional to elaborate stories on other invasive procedures, such as elective surgeries, blood collection, among others. In this case, the technical terms will have to be adapted, as well as the materials and the description of the procedure that will be carried out.

Any health team member can conduct the intervention using TP, either individually with the child or with a small group of children (three at most), at a private room in the hospital or wherever the child chooses. Individual sessions are recommended, as this will grant the children greater "freedom" to tell the story in their own words and will also facilitate their interaction with their parents during the TP session.

The parents or responsible caregivers should be invited to participate in the TP session and be encouraged to play with the child, with a view to also allowing them to clarify possible doubts. For the TP session, the health professional needs to use the protocol recommended by He et al. [10], adapted to the context of the institution where the child will undergo the procedure.

## Discussion

The cardiac catheterization is a highly complex procedure that can cause exhaustion and tension for the child, relatives and professionals. For this test, the child needs to fast for a long time and have contact with an unknown, strange and frightening environment (hemodynamics room) that is cold, contains different equipment and a team wearing clothing that makes it difficult to identify the people around him/her. Another critical moment is the withdrawal of the introducer, which consists in the removal of a device from the artery and/or vein with immediate compression in the punctured region for at least 20 min. The child needs to be confined to the bed for a period varying according to the standard procedure at the service.

The child frequently reacts to this midst through psychomotor agitation, crying and attitudes that make the preparation and anesthetic induction process to accomplish the procedure more difficult, requiring the child's containment, who can perceive this situation as an aggression.

The child's understanding of the procedure (s)he will be submitted to can be related with a period of stress and insecurity (s)he experiences. The behavior can vary according to the age range, environment, unknown people and invasive procedures experienced by the children or observed in other children. These factors contribute to the development of unpleasant reactions, such as fear, anxiety and resistance to the procedures to be performed. The hospitalization represents an aggression against their world of play and magic. Therefore, the attending professional needs to understand the children's world [20,21].

The use of educational technologies in health can contribute to individualize the care for the child, respecting the particularities of this phase and also serving as a tool to minimize the negative

reactions towards an invasive procedure, in this case the cardiac catheterization.

The understanding of technology is not restricted to the set of instruments used, but also refers to the knowledge and its material and non-material developments in the production of health services. It also includes the knowledge that serves to organize the human actions and, at the level of the interpersonal relationships, to provoke interventions in a given practical situation [22].

Educational technologies have been used in actions to promote the child's health. Being part of their daily life, the technology can be used as a tool to disseminate health knowledge. Nevertheless, its use does not dismiss the interaction with health professionals, teachers and relatives, considering that, in the teaching-learning process, the technologies need to be used intentionally [23].

In this study, the educational technology developed consists of the toy and an instruction script in the form of a children's story. When used in a TP session, these can constitute a dialogue among health, education and art, capable of permitting interaction among the health professional, the child and family members. It should be kept in mind, however, that this is not random play. The professionals need to be equipped, based on a theoretical-methodological background, to intentionally develop the play, in order to reach the objectives proposed to prepare the child, contributing to the reduction of anxiety, fear, pain and negative emotional behavior.

The hemodynamics sector, where the cardiac catheterization is performed, possesses high-tech equipment. This demands reflection on the nursing care for children, which should go beyond the delivery of care based on a biological view only, which is centered on the disease and on the execution of the technical procedure. For the sake of holistic care delivery to the child, the nursing care should also take into account the child's emotional and social needs and cover the use of appropriate communication and relationship techniques, harmonizing the use of medical-hospital equipment technology with humanized care for the child. In this context, the use of the TP is highlighted.

The family treats the child with the cardiac condition as a fragile being, and the child often sees him/herself as such, who should be protected from all efforts and problems. Even at school age, the child is treated as if (s)he were younger, does not tolerate frustrations and has not developed the emotional conditions needed for learning. This scenario shapes dynamics of overprotection and inhibition of emotional development and contributes to a delay in the child's psychosocial development [24]. Nevertheless, the recommendation for the age range between three and ten years rests on the possibility to contextualize the story according to the child's age.

The TP can be used as a communication tool in nursing care for the child. Beyond satisfying the leisure needs, it can offer an interface between common-sense and scientific knowledge, respecting the child as a citizen with rights, based on the biopsychosocial perspective, contributing to comprehensive and humanized care.

Clinical trials present positive effects of the TP intervention

on the reduction of perioperative anxiety, postoperative pain and negative behavior in hospitalized children who submit to surgical procedures [9,10,25].

The use of TP is a recommended practice that is regulated by the Federal Nursing Council, in article 1° of Resolution 295, issued in 2004, which determines: "As a member of the multiprofessional health team, it is up to the nurse working in the pediatric area to use the Therapeutic Toy/Play technique in care delivery to hospitalized children and families" [26].

## Conclusion

The children's story, elaborated for use with an instruction script, in combination with the use of the toy in a Therapeutic Play session, playfully addresses all phases of the pre, trans and post-catheterization process. This permits bringing the accomplishment of this highly-complex procedure into the child's universe, establishing an interface between the children's actual and imaginary situation. In addition, it permits an exchange between the scientific knowledge and the children's language.

The Therapeutic Play, when used with children with congenital cardiac disease, can produce a relationship of satisfaction and harmony between the professional and the child and avoid containment maneuvers to submit the child to the procedure. In addition, it can reduce risks related to the procedure, such as bleeding and hematomas when withdrawing the introducer. Another benefit would be the reduction of excessive crying, which could aggravate the cyanosis. These measures, which avoid the containment and complications, tend to make the process more humanized for the child, family and health professionals.

Technologies should be developed with a playful approach and the health professionals should be trained for their use in the context of child health care, with a view to favoring the coping with potentially threatening situations.

In this research, the development process of a toy and story was outlined, for use in a therapeutic play session. The protocol described in this study can support the elaboration of similar materials in other contexts of clinical practice, with a view to preparing the children for invasive procedures, something that is scarce in the literature thus far.

## Limitations

The development of this study entails the need for content validation research, permitting the use of the toy and story with children who are to be submitted to cardiac catheterization.

## ETHICAL CONSIDERATIONS

Authorization for the study was obtained from a Research Ethics Committee under CAAE 22327714.4.0000.5201 in February 2014.

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