Original Article

Therapeutic toy: strategy for pain management and tension relief during dressing change in children*

Brinquedo terapêutico: estratégia de alívio da dor e tensão durante o curativo cirúrgico em crianças

El juguete terapéutico: estrategia de alivio del dolor y tensión durante la curación quirúrgica en niños

Mariana Toni Kiche[1], Fabiane de Amorim Almeida[2]

ABSTRACT

Objective: To compare children's reactions during dressing change before and after emotional support by using an instructional therapeutic toy. **Methods**: The sample consisted of 34 children who underwent a surgical procedure in a pediatric public hospital in São Paulo City. Data on children's reactions and pain during dressing change were collected before and after the use of the therapeutic toy. **Results**: Children who had dressing change after the use of therapeutic toy had better adaptation and acceptance of dressing change. In addition, they also had lower pain score. **Conclusion**: The findings suggest that therapeutic toy was an effective strategy in reducing frightening, relieving tension, and managing pain in children during dressing change.

Keywords: Play and playthings; Child, hospitalized; Pain measurement; Pediatric nursing

RESUMO

Objetivo: Comparar as reações manifestadas pela criança durante o curativo realizado antes e após o preparo emocional com o brinquedo terapêutico instrucional (BTI). **Métodos:** A amostra constituiu-se de 34 crianças internadas para cirurgia em um hospital público pediátrico da cidade de São Paulo. Os comportamentos da criança e a avaliação da dor foram considerados durante o curativo em dois momentos: antes e após o brinquedo terapêutico. **Resultados:** Comportamentos indicativos de maior adaptação e aceitação ao procedimento tornaram-se mais freqüentes após o brinquedo, ao contrario daqueles que indicavam menor adaptação e aceitação. Os escores de dor também diminuíram após o brinquedo terapêutico. **Conclusão:** O brinquedo terapêutico se evidenciou como estratégia efetiva na redução do medo, da tensão e da dor da criança durante o curativo.

Descritores: Jogos e brinquedos; Criança hospitalizada; Medição da dor; Enfermagem pediátrica

RESUMEN

Objetivo: Comparar las reacciones manifestadas por el niño durante la curación realizada antes y después de la preparación emocional con el juguete terapéutico instruccional (BTI). **Métodos:** La muestra estuvo constituida por 34 niños internados para cirugía en un hospital público pediátrico de la ciudad de Sao Paulo. Los comportamientos del niño y la evaluación del dolor fueron considerados durante la curación en dos momentos: antes y después del uso del juguete terapéutico. **Resultados:** Los comportamientos que indicaron mayor adaptación y aceptación del procedimiento se volvieron más frecuentes después del uso del juguete, al contrario de aquellos que indicaban menor adaptación y aceptación. Los escores de dolor también disminuyeron después del uso del juguete terapéutico. **Conclusión:** El juguete terapéutico se evidenció como estrategia efectiva en la reducción del miedo, la tensión y del dolor del niño durante la curación.

Descriptores: Juegos e implementos de juego; Niño hospitalizado; Dimensión del dolor; Enfermeria pediátrica

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1 Nurse, graduated from the Hospital Israelita Albert Einstein of Nursing - FEHIAE – São Paulo, (SP), Brazil.

2 PhD, Professor of the Hospital Israelita Albert Einstein of Nursing - FEHIAE – São Paulo, (SP), Brazil.

Corresponding Author **Mariana Toni Kiche**
R. Dionísio Pedrelline, 241 - Butantã - São Paulo - SP
CEP. 05542-130 E-mail: mariana_tonikiche@yahoo.com.br

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INTRODUCTION

Playing is one of the key aspects of a child's life. When playing, children become creative and able to reinvent the world, develop affection, and, using the magic world of "make-believe", explore their own limits, setting out on an adventure that will lead them to find themselves[1-2].

The right to play must be preserved, even when the child is at a hospital. Play resources, in this context, do not represent an incentive for fun and entertainment only, but also an educational alternative, as it promotes social, emotional and intellectual development, and a therapeutic alternative, as it helps to reduce stress, fear and anxiety[3].

Another key aspect of playing is that it encourages interaction between the child and the adult. In general, the person whom the child plays with is found to be the same one it seeks when feeling afraid or needing help, thus establishing an important bond of trust during hospitalization[4-5].

For the child, especially during the pre-school stage, hospitalization represents a world of mystery and fear due to its inability to deal with the abstract, the temporal nature of facts, and cause and effect relationships. Later on, during the school stage, the child, when hospitalized, becomes more dependent on the adult, as it is moved away from its friends, who now take on an important role in its life. The hospital is viewed as a place of prohibitions, and for this reason it is essential to allow the child to play, run, sunbathe and explore the hospital. In addition, conditions must be provided for this child to continue its school activities in the hospital and also to perform leisure activities with children of the same age[2,6].

Thus, hospital care must consider not only the physical care and/or clinical treatment. There are several resources or measures that can provide more humanized child care, such as explaining the reasons for hospitalization, preparing the child for the procedures it is going to be submitted to, and using toys as an integral part of care in the hospital[6].

In Brazil, some experiences stand out, when preparing the child emotionally for procedures such as venipuncture, intrathecal medication and cardiac surgery[6-8].

Four basic functions are necessary to better understand the therapeutic role of toys: recreation, when pleasure and distraction are the activity's main objective; stimulation, by promoting sensory-motor, intellectual and social development and creativity in a natural way; socialization, by enabling the child to experience social roles and to learn to relate to others; catharsis, by enabling the child to play out roles and conflicts it is facing as a means to release emotional tension[6].

One of the games that enables catharsis is the therapeutic toy (TT), which is founded on play therapy principles. It consists in a structured toy that enables children to reduce anxiety caused by experiences which are atypical for their age and usually threatening, and also require more than recreation to resolve related anxiety. It is a non-directive technique, which should be used whenever the child has difficulty in dealing with or understanding the experience, providing the opportunity to release tension afterwards by playing out the situations experienced and touching the instruments used or toys that represent them. In addition, the TT has the purpose of helping to prepare the child for therapeutic procedures (instructional TT), aiming to provide understanding about the treatment and to clarify mistaken concepts[6].

The TT is an essential tool for health professionals who work in pediatric units, especially when preparing the child for invasive procedures, thus enabling better acceptance and cooperation. When this child is not prepared emotionally for hospitalization and hospital procedures, it can behave according to its fear of the unknown, undermining its abilities to effectively deal with this experience[6].

In view of this fact, and based on positive findings in the literature, the authors decided to further explore the use of toys when preparing the child for hospital procedures, with this study's particular focus on post-surgical dressings. Interest in this theme arose from the authors' experience with care for children submitted to surgery, often witnessing their suffering when dressing is applied.

OBJECTIVES

- To compare reactions shown by children during dressing applied before and after emotional preparation with instructional therapeutic toy (ITT);
- To assess and compare pain felt by the child while dressing is applied, before and after ITT preparation.

METHODS

This study was descriptive and exploratory, with a quantitative approach. It was performed in the Darcy Vargas Children's Hospital surgical unit, in the city of São Paulo. Sample was comprised by 34 children, admitted for minor and average surgeries. Data were collected between October and November 2006. The use of instructional therapeutic toy (ITT) was the independent variable employed and types of behavior shown by children were the dependent variables.

This research project was approved by the Albert Einstein Jewish Hospital Research Ethics Committee (CEP no. 06/435, CONEP no. 0054.0.028.000-06), with

data collection beginning after obtaining authorization from the institution where this was performed. The child and its legally responsible adult were informed about research details and, when both agreed to participate, an Informed Consent Form was signed by this adult.

Data were collected by observing children during post-surgical dressing application in two moments. At the first moment, the child's behavior and reactions were observed during the first dressing applied in the inpatient ward after surgery.

After dressing was applied, an ITT session was conducted, when researcher showed the dressing procedure on a doll. At the end of the demonstration, the child was invited to repeat the game, enabling the identification of misunderstood aspects and their subsequent clarification, if necessary. Materials used in this ITT session included: a doll, plastic bottle with physiological serum, gauze, Micropore tape, adhesive plaster, masks, scissors, dressing tweezers, gloves, splints and other specific items, according to the child's type of dressing.

On the following day, before the next dressing was applied, the ITT session was repeated, and during dressing application, researcher observed the child's behavior and reactions again.

Observations were recorded on a formulary that contained the following information: child identification data; list of types of behavior to be observed before and after ITT, selected from the literature consulted[9-10] in the form of a check-list. Assessment of level of pain was performed according to Wong-Baker Faces Pain Scale, presented by Algren[11]. This assessment occurred while dressing was applied, when researcher observed the child's reactions in two moments during the procedure: without the ITT session and with the ITT session.

Data were analyzed using inferential and descriptive statistical techniques and subsequently shown on tables. McNemar test was employed to assess behavioral variations (nominal variables) and Wilcoxon signed rank test was employed to assess pain score variation (ordinal variable). In these tests, rejection level of null hypothesis was set at 5% ($a \leq 0.05$).

RESULTS

The majority of children were male (20; 58.51%), aged between 3 and 10 years (mean age = 6 years and 7 months; standard-deviation = 3).

Types of behavior during dressing application

By analyzing children's behavior during dressing application initially, significant changes were found, when comparing results obtained before and after the ITT session. Before this session, types of behavior showing less adaptation to and acceptance of procedure predominated, when the following stood out: collaborates passively (88.2%), behaves protectively and remains silent (44.1%), facial expression shows fear (35.3%), and shows muscular tension and requests mother's presence (32.3%), as show on Table 1.

In addition, the majority of types of behavior were found to become less frequent after the ITT session, especially the following: "shows muscular tension" (8.8%), "behaves protectively" and "facial expression shows fear" (11.8%). Only "collaborates passively" became more frequent after the session (91.2%), but this increase was not statistically significant as the a values were well above 0.05 (Table 1).

By analyzing types of behavior that show more

Table 1 – Types of behavior that reveal less acceptance of and adaptation to procedure before and after therapeutic toy session (n=34). São Paulo, 2006

Types of behavior	Before ITT		After ITT		Statistical test
	N	%	N	%	(McNemar)
Collaborates passively	30	88.23	31	91.17	1.000
Behaves protectively[1]	15	44.11	04	11.76	0.001
Remains silent	15	44.11	12	35.29	0.250
Facial expression shows fear[2]	12	35.29	04	11.76	0.008
Shows muscular tension[3]	11	32.35	03	8.82	0.008
Requests mother's presence	11	32.35	11	32.35	1.000
Avoids looking at professional and incision	09	26.47	05	14.70	0.125
Gives monosyllabic answers	08	23.52	05	14.70	0.250
Cries	04	11.76	03	8.82	1.000
Screams	01	2.94	01	2.94	1.000
Asks for procedure to be interrupted	01	2.94	01	2.94	1.000
Does not respond to stimuli, showing indifference	0	0	01	2.94	1.000

ITT=instructional therapeutic toy
***** McNemar test: a= 0.001 [1]; a= 0.008 [2,3]

Table 2 – Types of behavior that reveal more adaptation to and acceptance of procedure before and after therapeutic toy session. São Paulo, 2006

Types of behavior	Before ITT		After ITT		Statistical test
	N	%	N	%	(McNemar)
Observes the professional attentively	29	85.29	30	88.23	1.000
Verbalizes what it feels	24	70.58	23	67.64	1.000
Has a relaxed posture[1]	23	67.64	29	85.29	0.031
Has a relaxed facial expression[2]	22	64.70	30	88.24	0.008
Plays[3]	22	64.70	32	94.11	0.002
Questions professional/mother	17	50.00	22	64.70	0.063
Smiles[4]	15	44.11	29	85.29	0.000
Helps professional spontaneously[5]	13	38.23	25	73.52	0.000

ITT=instructional therapeutic toy

***** McNemar test: a= 0.031[1]; a= 0.008[2]; a= 0.002[3]; a= 0.000[4,5].

adaptation to and acceptance of procedure, all of them were found to become more frequent during the dressing applied after the ITT session, according to data on Table 2, except for one of them: "verbalizes what it is feeling" (67.6%).

Among the types of behavior evidenced by a greater number of children after the ITT session, the categories "plays" (94.1%); "has a relaxed facial expression" (88.2%); "smiles" (85.3%), "has a relaxed posture" (85.3%); and "helps professional spontaneously" (73.5%) showed significant difference (Table 2).

Assessment of pain reported by the child during dressing application

Considering the severity of pain felt by the child during dressing application, the majority of them reported a score of three (55.9%) before the session, showing moderate pain ("has even more pain"), whereas, after the session, the scores zero (47.1%) and one (41.2%) predominated, revealing absence of pain or mild pain (Table 3).

Except for scores zero (47.1%) and one (41.2%), which began to be more frequently reported by children after the session, the remaining scores, i.e. from two ("a little pain") to five ("maximum pain"), were found to be less frequent (Table 3).

Table 3 – Pain scores reported by children during dressing applied before and after therapeutic toy session. São Paulo, 2006

Pain scores	Before ITT		After ITT	
	N	%	N	%
0	01	2.94	16	47.06
1	03	8.82	14	41.18
2	04	11.76	02	5.88
3	19	55.88	02	5.88
4	04	11.76	-	-
5	03	8.82	-	-
Total	**34**	**100.00**	**34**	**100.00**

ITT=instructional therapeutic toy

By comparing scores reported during dressing application by the same child, before and after the TT session, the majority of them (97.1%) were found to show lower scores after playing, and only one of them (2.9%) continued to refer to the same faces scale score (Table 4). All these differences observed were found to be statistically significant by the Wilcoxon test (a=0.000), revealing that children actually began to report less pain after playing.

Table 4 – Comparison of pain scores shown by the same child before and after therapeutic toy session. São Paulo, 2006

Comparison between pain scores before and after ITT*	children	
	N	%
Pain score **decreased** after ITT	33	97.05
Pain score **increased** after ITT	-	-
Same score after ITT	1	2.95
Total	34	100.00

ITT=instructional therapeutic toy

DISCUSSION

The literature shows consensus on the importance of toys/therapeutic toys for the hospitalized child, recommending that they be a part of child nursing care, helping it to face difficulties, pain and stress caused by this experience[12].

This became clear in this study, as some types of behavior that suggest less acceptance of and adaptation to the procedure decreased after the TT session, whereas other types that suggest more acceptance and adaptation became more frequent. Children began to collaborate during the procedure, showing more willingness to help spontaneously. They smiled while playing, overcoming their fear and tension.

In addition, another study[7] shows positive results with TT use, when children began to interact better after preparation for venipuncture using a toy. Other studies also reported better child behavior and stress relief with

the use of toys[5-6, 13-14].

One study reported the case of a child submitted to cardiac surgery who had its hospitalization prolonged due to post-surgical complications, progressing with relevant behavioral changes, associated with the ability to interact with the environment: the child refused contact with other people; spoke little and low, restricting dialogue to the mother; and was not interested in playing. Toy sessions, among other interventions, allowed the child to develop an effective interaction with the health team, as playing alone enables a therapeutic experience[15].

Moreover, in this study, as in the previous one, authors observed that the child-mother relationship became stronger with the therapeutic toy. Children used to seek them after toy sessions, asking them to return to play. In addition, when mothers met researchers, they showed satisfaction with their child's behavioral improvement after therapeutic toy sessions.

Research authors, as well as another author, also pointed out the great value of this strategy to provide a more effective interaction between child and adult, causing the environment and procedures to become less frightening, as well as promoting its adaptation to the unit, as reported in terms of the severity of pain felt by children with oncological problems during dressing application. In the study mentioned, almost all children began to report lower scores after the TT session[14].

It is believed that reduction in pain results from the fact that toys create pleasure and distraction, relieving child stress and, consequently, pain. At this moment, the healing function of playing is clearly evidenced, acting as a source of relief and reducing child anxiety[16-17].

The feeling of pleasure became evident during the TT session, when children were found to be very interested in "playing" and applying dressing to the doll, and the majority wanted to keep playing, even after the session ended. It is worth emphasizing that playing is a spontaneous activity, free from conflict and tension, always involving an element of pleasure[16,17].

However, it is essential to consider the fact that, as the days go by, post-surgical pain tends to decrease, contributing to the child's beginning to report lower pain scores.

CONCLUSION

Authors observed that before the session with the toy, several children were frightened and did not cooperate with the nursing team while procedures were performed, behaving protectively and remaining silent (44.1%), showing a facial expression of fear (35.3%) and muscular tension (32.3%). The majority of types of behavior became less frequent after the TT session, when children became more cooperative, showing a relaxed posture (85.3%) and a relaxed facial expression (88.2%), helping professional spontaneously (73.5%), smiling (85.3%) and playing (94.1%).

As regards pain, there was a reduction in its severity after the TT session: before this session, the score three (moderate pain) was the one most reported by children (55.9%), whereas, after this session, the score zero (no pain) predominated (47.1%). By comparing the scores reported by the same child before and after the TT session, almost all of them (97.1%) reported lower scores after playing.

In conclusion, the TT session contributed to relieve child pain and tension during dressing application, as it enabled this child to better understand the need for the procedure and begin to cooperate more while it was performed.

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