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ORIGINAL ARTICLE / ORİJİNAL MAKALE

The Effect of Watching Cartoons on Pain and Anxiety During Central Venous Catheter Dressing Changes in Pediatric Oncology Patients: A Randomized Controlled Trial

Santral Venöz Katater Pansumanı Sırasında Çizgi Film İzlemenin Ağrı ve Kaygıya Etkisi: Randomize Kontrollü Bir Çalışma

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Abstract

Background: Hickman catheters (HC) are integral to pediatric oncology care. Nevertheless, the frequently repeated nature of HC dressing changes can provoke procedure-related pain and fear in children. During these procedures, watching cartoons represents a low-resource, readily implementable distraction strategy. While the literature extensively examines interventions to reduce pain and fear during needle-based procedures such as port access, evidence specifically focused on HC dressing changes remains limited.

Objectives: This study aimed to examine the effect of watching cartoons on pain and fear levels during HC dressing changes in pediatric oncology patients.

Methods: A parallel two-arm randomized controlled trial was conducted with 80 pediatric oncology patients aged 5 to 12 years. Children were randomly allocated to two groups: cartoon (n = 40) and control (n = 40). Children self-reported their pain using the Wong-Baker FACES Pain Rating Scale and their fear using the Children's Fear Scale. Children's oxygen saturation and heart rate were evaluated using a pulse oximeter device. The clinical trial registration number of the study is NCT05301374. The descriptive statistics, the Mann-Whitney U test, the independent samples t-test, Yates' continuity correction test, and Pearsons's x^2 test were used to analyse the data.

Results: Children's pain and fear scores and heart rates were significantly lower in the cartoon group compared to the control group during and after the HC dressing change procedure. However, no significant difference was seen in oxygen saturation values between the two groups.

Conclusion: This study demonstrated that watching cartoons during HC dressing changes in pediatric oncology patients is effective for relieving pain and fear. Nurses can use the cartoon distraction method to help relieve procedure-related pain and fear in children during HC dressing changes.

Key Words: Fear, Hickman catheter, Oncology, Pain, Pediatric

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Öz

Giriş: Hickman kateter (HK), pediatrik onkoloji bakımının temel bileşenlerindendir. Bununla birlikte, sık yinelenen HK pansuman değişimi çocuklarda işlem ilişkili ağrı ve korkuya neden olabilmektedir. Bu süreçte, klinik uygulamada kolaylıkla hayata geçirilebilen ve düşük kaynak gerektiren bir dikkat dağıtma yaklaşımı olarak çizgi film izletme yöntemi kullanılabilir. Literatürde, özellikle port iğne erişimi gibi iğne temelli girişimler sırasında ağrı ve korkuyu azaltmaya yönelik müdahaleler kapsamlı biçimde incelenmişken, HK pansuman değişimine özgü kanıtların sınırlı olduğu görülmektedir.

Amaç: Bu çalışmanın amacı, pediatrik onkoloji hastalarında HK pansumanı değişimi sırasında çizgi film izlemenin ağrı ve korku düzeyine etkisini incelemektir.

Yöntem: Yaşları 5 ile 12 arasında değişen 80 pediatrik onkoloji hastasıyla paralel iki kollu randomize kontrollü bir çalışma yürütüldü. Çocuklar rastgele iki gruba ayrıldı: çizgi film (n = 40) ve kontrol (n = 40). Çocuklar, Wong-Baker FACES Ağrı Derecelendirme Ölçeği'ni kullanarak ağrılarını ve Çocuk Korku Ölçeği'ni kullanarak korkularını kendileri bildirdiler. Çocukların oksijen saturasyonu ve kalp atım hızı, nabız oksimetresi cihazı kullanılarak değerlendirildi. Araştırmanın klinik araştırma kayıt numarası NCT05301374'tür. Verilerin analizinde tanımlayıcı istatistikler, Mann-Whitney U testi, bağımsız örneklem t-testi, Yates süreklilik düzeltme testi ve Pearson x^2 testi kullanılmıştır.

Bulgular: HK pansumanı değişim işlemi sırasında ve sonrasında çizgi film grubunda çocukların ağrı, korku skorları ve kalp atım hızları kontrol grubuna göre anlamlı derecede düşüktü. Ancak iki grup arasında oksijen satürasyonu değerlerinde anlamlı bir fark görülmedi.

Sonuç: Bu çalışma, pediatrik onkoloji hastalarında HK pansumanı değişimi sırasında çizgi film izlemenin ağrı ve korkuyu gidermede etkili olduğunu göstermiştir. Hemşireler, HK pansumanı değişimi sırasında çocuklarda işleme bağlı ağrı ve korkuyu hafifletmeye yardımcı olmak için çizgi film dikkat dağıtma yöntemini kullanabilir.

Anahtar Kelimeler: Korku, Hickman Kateter, Onkoloji, Ağrı, Pediatrik

INTRODUCTION

Hickman catheters (HC) are an important component for pediatric oncology patients (Howie et al., 2020). Although dressings are applied to preserve the catheter and the skin (Kramer et al., 2019), when dressing changes are applied frequently, it can damage the surrounding skin and therefore lead to skin damage or pain when the dressing is removed (Gavin et al., 2016). Pain-inducing medical procedures, which are often inevitable in pediatric medical care, can be the cause of significant pain, distress, anxiety, or fear and can lead to adverse long-term consequences (Sajeey et al., 2021). Negative experiences, such as pain and distress, caused by medical procedures can influence a child's perception of healthcare, leading to increased procedural difficulties, reduced compliance with cancer procedures, and ultimately poor treatment outcomes and worsening of cancer (Yap et al., 2020).

Distraction is a non-pharmacological method that is used to relieve pain, fear or anxiety in children, includes distraction cards (Canbulat et al., 2014; Sahiner and Bal, 2016), listening to music (Karakul et al., 2022; Koç Özkan, 2020; Nguyen et al., 2010), kaleidoscope (Canbulat et al., 2014; Koç Özkan, 2020; Bekar et al., 2022; Özkan and Polat, 2020), virtual reality (Özkan and Polat, 2020, Wong et al., 2021) and watching cartoons (Inan and Inal, 2019). In pediatric oncology, distraction-based interventions (e.g., virtual reality, cartoons) aimed at reducing pain, anxiety, and fear during port needle access have been studied extensively; these trials consistently report significant reductions in port-access–related pain, fear, and anxiety (Gerçeker et al., 2021; Hundert et al., 2022). By contrast, research

on managing pain and fear during central venous catheter dressing changes is limited; however, one study has shown that kaleidoscope-based distraction during these procedures can reduce pain and fear scores (Bekar et al., 2022). In dressing contexts outside HC care (e.g., burn dressings), the beneficial effects of audiovisual distraction on physiological indicators and pain have likewise been demonstrated, supporting the potential effectiveness of distraction during dressing changes (Cheraghi et al., 2021; Özsoy et al., 2022). Moreover, the repetitive nature of dressings may increase the risk of skin trauma and procedure-related discomfort, making pain and fear management during dressing changes even more clinically important (Gavin et al., 2016). However, to our knowledge, no study has determined the effect of cartoon watching on relieving fear and pain during HC dressing changes in pediatric oncology patients.

The purpose of this study was to examine the effect of watching cartoons on relieving pain and fear during HC dressing changes in pediatric oncology patients. Within the scope of this research, the following hypotheses were assessed.

Hypotheses

H11: The HC dressing changes-related pain scores of children in the cartoon group will be lower than those in the control group.

H12: The HC dressing changes-related fear scores of children in the cartoon group will be lower than those in the control group.

H13: The heart rate (HR) values of children in the cartoon group will be lower compared to the control group during HC dressing changes.

H14: The oxygen saturation (SPO2) levels of children in the cartoon group will be higher compared to the control group during HC dressing changes.

METHODS

Type of Research

This study was a two-arm, parallel-group randomized controlled trial.

Place of the Research

The study was conducted at pediatric hematology-oncology clinic of a university hospital in Turkey between December 2021 and February 2022.

The Universe/Sample of the Research

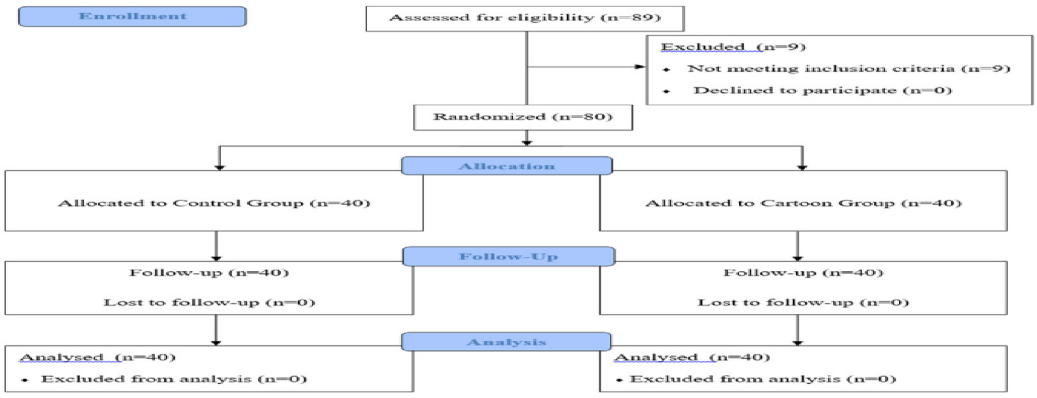

Figure 1. Flow diagram of the study

Randomization, allocation, and blinding

The closed envelope method was used for randomization. The researcher placed pictures representing the groups inside envelopes in equal numbers (40 of each, totalling 80) for the cartoon and control groups. Then, the researcher asked the children to select one of the sealed envelopes. The children were assigned according to the picture inside the selected envelope to the cartoon or control group. Blinding was not possible due to the nature of the study. The researcher, who was also a nurse in the clinic, was not blinded to the group assignment because she conducted the application and did the randomization herself. Since the children were informed about the study beforehand, they became aware of which group they were in when they watched cartoons or not. However, to prevent bias during the data analysis phase, the data were analyzed by an independent statistician who was unaware of the cartoon and control groups.

Data Collection Instrument-Validity and Reliability Information

The primary outcome was the self-reported pain. The other outcomes of the study were the children's physiological characteristics (SPO2 and HR values) and self-reported fear.

Child-parent Information Form

The researchers prepared the form based on the literature (Canbulat et al., 2014; Gerçeker et al., 2021; Inan and Inal, 2019; Yildirim et al., 2019) and included the descriptive characteristics such as the child's gender, age, time since HC insertion, number of previous HC dressings, parents' ages, and educational levels.

Wong-Baker FACES Pain Rating Scale

It was developed by Wong and Baker in 1981 and revised in 1983. The Wong-Baker FACES pain rating scale (WB-FACES) is used to assess pain in children aged 3 to 18 years (Wong and Baker, 1988). The scale contains six faces and scores from 0 (no hurt) to 10 (hurts worst) (Wong and Baker, 2016). This scale has been used to evaluate the pain level of Turkish children in previous studies (Canbulat et al., 2014; Inan and Inal, 2019; Gerçeker et al., 2021).

Children's Fear Scale

It was developed by McMurtry et al. (2011). The Children's Fear Scale (CFS) contains five facial expressions and scores from 0 (no fear) to 4 (severe fear). The Turkish validity and reliability of the scale was conducted by Gerçeker et al. (2018). The CFS can be used for 5–10 years old children. The scale also was used in Gerçeker et al.'s (2020) study performed with children aged 5–12 years.

Physiological Characteristics Measurement Form

This form was used to record HR and SPO2 data measured using a pulse oximetry device (Nellcor) in children before, during, and after the procedure.

Intervention

The researcher gave information to the children and their parent about the study and obtained written and verbal consent from parent and children who met the research criteria and wished to participate in the study. The researcher interviewed face-to-face with the parent and filled out the child-parent information form. Children, parents, and health professionals in the clinic where the study was performed wore a medical face mask.

The children were informed about the scales (WB-FACES, and CFS) by the researcher. Children assessed their own fear using the CFS 4 minutes prior to the HC dressing change procedure. Then, the researcher asked the children to select one of

the sealed envelopes to ensure randomization. Children evaluated their pain and fear during the procedure using the WB-FACES and CFS immediately after the procedure. Children evaluated their post-procedural pain and fear using the scales 5 minutes after the HC dressing change procedure. Prior to HC dressing change, the nurse visually inspected the HC exit site for erythema, discharge, or tenderness; HC dressing-change sessions are deferred when abnormal signs are present.

Children were not under continuous cardiorespiratory monitoring; HR and SpO_2 were obtained as spot measurements for research purposes. The HR and SpO_2 were measured by the researcher using a pulse oximeter 4 minutes before, during, and 5 minutes after the procedure. Because procedure-related HR and SpO_2 may manifest as autonomic arousal, these physiological parameters were pre-specified as secondary outcomes to capture physiological responses. The researcher disinfected the pulse oximeter device before each use.

In the clinic, the training nurse provides information to children and parents about HC dressing. All study procedures were conducted by the same researcher, a pediatric oncology nurse with 11 years of clinical experience. This researcher performed the HC dressing changes, administered the Wong-Baker FACES and Children's Fear Scale assessments, and obtained HR and SpO_2 measurements.

All patients had the HC as per the procedure of the institution where the study was conducted. In the clinic, first HC dressing is performed 24 hours after the catheter is first placed. Then, the HC dressing change is performed every 2 days as routine. In addition, when the dressing is contaminated (wetting, removing bandages etc.), the HC dressing change is performed. Gauze dressings were applied to the children in the study. The average time to change the HC dressing was 10 minutes. In the clinic, non-pharmacological and pharmacological techniques are not routinely applied to relieve fear and pain in children during the procedure. However, the parent is allowed to stay with their own children during the procedure at the clinic.

Standardized Hickman Catheter Dressing Procedure

Preparation and Infection Control

-The nurse performed hand hygiene.

-A sterile dressing kit and all necessary supplies were prepared on a clean surface.

-The child was comfortably positioned in a semi-fowler position on the bed to ensure clear access to the catheter exit site.

Examination of the Catheter Site

-Before removing the dressing, the nurse visually inspected the exit site for redness, discharge, odor, swelling, or tenderness.

-If any abnormal findings were detected, the dressing change was postponed, and a physician was informed.

Removal of the Old Dressing

-To minimize skin trauma, the existing gauze dressing was gently removed from the edges toward the center.

Skin Cleansing and Antiseptic Application

-The area around the catheter exit site was cleaned with sterile gauze containing 70% alcohol for 30 seconds using a circular motion.

-To maximize antiseptic effectiveness, the area was allowed to air dry completely.

Post-Cleaning Assessment

-The nurse re-evaluated the skin after cleaning

for any irritation or damage.

-The catheter sutures and lumen integrity were visually inspected.

Application of New Dressing

-Sterile gauze was placed around the catheter exit site.

-A sterile adhesive dressing was applied to secure the gauze and catheter without tension.

-The catheter lumen was positioned to prevent twisting or pulling.

Completion of the Procedure

-The nurse removed gloves, performed hand hygiene, and ensured the child was comfortable.

-The dressing change duration was approximately 10 minutes for all participants.

-Parents were allowed to stay with their children during the entire procedure as part of routine practice.

Gauze dressings were used for all HC dressing changes because they represent the routine institutional practice in the pediatric oncology clinic where the study was conducted. Transparent semipermeable catheter dressings were not available in the institution; therefore, the dressing protocol followed the hospital's standard procedure. Using the same dressing type for all participants ensured procedural consistency across groups.

Study groups

Cartoon group

Before HC dressing changes, the pediatric oncology nursing research team pre-screened cartoons for age-appropriateness and to exclude distressing medical or violent content; children in the intervention group then selected one of the approved titles to watch. Among the cartoons identified and determined through the literature review (Cheraghi et al., 2021; Inan and Inal, 2019), the ones that children generally prefer to watch are as follows: Tom & Jerry, Feed the Cat, Little Mouse, The Happy Duck, A Row of Canaries, Food is Ready, Jump to the Ceiling, Donald Duck, and Speedy Gonzales. The children started to watch the cartoons on a tablet computer 2 minutes before the HC dressing changes and continued to watch until the dressing changes were completed. For each child, the tablet was disinfected before use. Parent stayed with their children throughout the procedure.

Control group

No fear and pain reduction methods were implemented for the children in this group. Parent stayed with their children throughout the procedure. This was the routine practice of the clinic.

Evaluation of the Data

Data were analyzed by using SPSS (Chicago, IL, USA) version 21.0 for Windows. The Shapiro–Wilk test was applied to evaluate data normality. The descriptive statistics, the Mann–Whitney U test, the independent samples t-test, Yates' continuity correction test, and Pearson's $\chi 2$ test were used to analyse the data. Significance was assessed at the level of $p < .05$.

Ethical Aspect of the Research

Ethical approval was received from the ethics committee, and written permission was received from the hospital. Children and their parent were informed about the study. Children and their parent were also informed that they could withdraw from the study at any time without explanation. Their verbal and written consents were provided. This study was registered on ClinicalTrials.gov (NCT05301374).

RESULTS

The sample characteristics according to groups are demonstrated in Table 1. All children included in the study had previous HC dressing experience. No complications or interruptions related to the HC catheter or dressing-change procedure were observed or documented during the study sessions. No significant differences were discovered between the cartoon and the control groups regarding sample characteristics ($p > .05$). These results indicated that the cartoon and control groups were similar regarding the children and their parents' descriptive characteristics (Table 1).

Table 1. Comparison of Characteristics of the Children and Their Parents in the Groups

Characteristics	Cartoon Group (n = 40)		Control Group (n = 40)		Test	p-value
	n	%	n	%		
Gender						
Girl	21	52.5	22	55.0	0.000[a]	1.000
Boy	19	47.5	18	45.0		
Mother's educational level						
Elementary	15	37.5	22	55.0	1.810[a]	.178
High school	25	62.5	18	45.0		
Father's educational level						
Elementary	11	27.5	17	42.5	2.104[b]	.349
High school	25	62.5	19	47.5		
University	4	10.0	4	10.0		
Cancer diagnosis type						
Acute lymphoblastic leukaemia	24	60.0	24	60.0	2.133[b]	.344
Lymphoma	4	10.0	8	20.0		
Solid Tumors	12	30.0	8	20.0		
Time since HC insertion						
1–6 months	23	57.5	19	47.5	0.451[a]	.502
7–12 months	17	42.5	21	52.5		
Continuous Variables	**Mean ± SD**	**Q2 (Q1-Q3)**	**Mean ± *SD***	**Q2 (Q1-Q3)**		
Child's age (years)	9.30 ± 2.31	9 (7.25–12)	8.73 ± 2.26	9 (7–11)	683.50[c]	.257
Mother's age (years)	38.73 ± 7.63	38 (32.25–44)	39.33 ± 7.60	39 (32–48)	772.50[c]	.791
Father's age (years)	41.28 ± 7.81	41 (35–44)	41.83 ± 7.49	41 (36–49.75)	771.00[c]	.779
Number of previous hospitalizations	4.65 ± 3.35	3.5 (2–7.75)	4.45 ± 2.75	4 (3–5.75)	769.00[c]	.763
Number of previous HC dressings	70.00 ± 52.83	70 (43.75–136.50)	97.65 ± 45.23	105 (70–126)	699.50[c]	.329

[a]Yates' Continuity Correction Test; [b]Pearson chi-square test; [c]Mann Whitney U Test.
HC, Hickman catheter; SD, standard deviation; Q2, Median; Q1, The first 25% of the data; Q3, The first 75% of the data

Pain scores according to groups are showed in Table 2. A significant difference was found between groups according to their pain scores during and after the procedure ($p < .001$), with pain scores being significantly higher in the control group than in the cartoon group (Table 2).

Table 2: Comparison of Pain Scores During and After the Hickman catheter Dressing Changes According to Groups

Pain Scores	Cartoon Group (*n* = 40)	Control Group (*n* = 40)	Test	*p*-value
	Mean ± *SD* Q2 (Q1–Q3)	Mean ± *SD* Q2 (Q1–Q3)		
During procedure	2.65 ± 2.05 2 (0.5–4)	4.95 ± 2.08 6 (4–6)	364.50 [a]	<.001*
After procedure	0.70 ± 1.32 0 (0–2)	2.40 ± 2.18 2 (0–4)	436.50[a]	<.001*

[a] Mann Whitney U test; *p < .001.
SD, standard deviation; Q2, Median; Q1, The first 25% of the data; Q3, The first 75% of the data

The groups were compared for CFS scores, and the results are reported in Table 3. The difference between the preprocedural fear level of the cartoon and control groups was not statistically significant (p > .05). Significant differences were discovered between the cartoon and control groups in terms of CFS scores during and after HC dressing changes (p < .001), with CFS scores being significantly higher in the control group than in the cartoon group (Table 3).

Table 3. Comparison of Fear Scores Before, During, and After the Hickman catheter Dressing Changes According to Groups

Fear Scores	Cartoon Group (*n* = 40)	Control Group (*n* = 40)	Test	*p*-value
	Mean ± *SD* Q2 (Q1–Q3)	Mean ± *SD* Q2 (Q1–Q3)		
Before procedure	2.13 ± 0.82	2.33 ± 1.23	669.50[a]	.185
	2 (2–2.75)	2 (2–3)		
During procedure	0.68 ± 0.86 0 (0–1)	1.83 ± 1.11 2 (1–3)	346.00[a]	<.001*
After procedure	0.23 ± 0.53 0 (0–0)	1.33 ± 0.94 1 (1–2)	284.00 [a]	<.001*

[a] Mann Whitney U test; *p < .001.
SD, standard deviation; Q2, Median; Q1, The first 25% of the data; Q3, The first 75% of the data.
The CFS is scored using integer values from 0 to 4; summary statistics are presented as median (Q1–Q3). Decimal quartiles arise from percentile/interpolation calculations and do not represent individual scores

The groups were compared for HR and SPO2 values, and the results are presented in Table 4. The difference between the HR values of the cartoon and control groups was not statistically significant before the procedure (p > .05). However, the HR values in the cartoon group were significantly lower than the control group during (p = .031) and after the procedure (p = .023). No significant differences were observed between the cartoon and control groups in terms of SPO2 values before, during, and after the procedure (p > .05; Table 4).

Table 4. Comparison of Heart Rate and Oxygen Saturation Values Before, During, and After the Hickman catheter Dressing Changes According to Groups

	Cartoon Group (*n* = 40)	Control Group (*n* = 40)	Test	*p*-value
	Mean ± *SD* Q2 (Q1–Q3)	Mean ± *SD* Q2 (Q1–Q3)		
Heart Rate				
Before procedure	96.25 ± 14.42 96 (84.50–107.75)	98.68 ± 15.11 101 (88–108)	-0.734[b]	.465
During procedure	112.25 ± 19.94 117 (93–123.25)	121.73 ± 18.71 125 (108.5–131.5)	-2.192[b]	.031*
After procedure	99.90 ± 14.61 101 (90–108)	106.55 ± 14.63 108 (100–112.5)	564.00[a]	.023*
Oxygen Saturation				
Before procedure	99.85 ± 0.48 100 (100–100)	99.75 ± 0.67 100 (100–100)	775.00[a]	.661
During procedure	99.80 ± 0.61 100 (100–100)	99.80 ± 0.61 100 (100–100)	800.00[a]	1.000
After procedure	99.90 ± 0.44 100 (100–100)	99.85 ± 0.53 100 (100–100)	780.00[a]	.646

[a] Mann Whitney U test; [b] Independent Samples t-test; *p < .05.
SD, standard deviation; Q2, Median; Q1, The first 25% of the data; Q3, The first 75% of the data

DISCUSSION

Studies have indicated that distraction methods are effective in relieving procedural pain, fear or anxiety in children with cancer (Bekar et al., 2022; Gerçeker et al., 2021; Wong et al., 2021). This study examined the effect of watching cartoons in pediatric oncology patients on relieving the pain and fear during HC dressing changes.

Our results indicated that watching cartoons decreased the pain of children during and after HC dressing changes. The previous studies found that pain decreases during invasive procedures among children who watch cartoons (Inan and Inal, 2019; Cheraghi et al., 2021; Düzkaya et al., 2021). We found that the cartoon distraction method is effective in reducing pain. Distraction techniques that will increase children's pain and comfort are needed.

In the current study, the cartoon group had a lower fear score compared to the control group during and after HC dressing changes. Similarly, Inan and Inal (2019) reported that watching cartoons was effective in reducing the fear score of children during venipuncture. Additionally, Düzkaya et al. (2021) determined that watching a cartoon during intravenous (IV) insertion procedure is effective in reducing fear in children. Ozkan et al. (2021) also found that watching cartoons during IV treatment reduced the fear levels of children. These results showed the effectiveness of the cartoon distraction method in reducing fear.

We found that the children in the cartoon group had lower HR values than the children in the control group during and after the procedure. Similar to our findings, Cheraghi et al. (2021) reported a significant difference in heart rate during and after burn dressing changes between children who watched cartoons and those in the control group. Based on these results, it can be said that the cartoon distraction method has a positive effect on heart rate during and after the dressing change in children.

The present study found no difference in SpO_2 values between the cartoon and control groups during and after the procedure. Therefore, according to our results, it can be said that the cartoon distraction method has no effect on SpO_2 during and after the HC dressing change procedure in pediatric oncology patients. Similarly, Düzkaya et al. (2021) reported no significant difference in SpO_2 values between children who watched cartoons and those who did not during an invasive procedure.

This study indicated that watching cartoons is an effective method that can be used to relieve procedure-related pain and fear during HC dressing changes. This study added to the literature concerning the use of cartoon method for the reduction of pain and fear during HC dressing changes. Future studies could expand on our results by investigating the effectiveness of watching cartoons for relieving fear and pain related to HC dressing changes in different age groups or the effectiveness of other non-pharmacological techniques in pediatric oncology patients.

Limitations

A limitation of this study is that gauze dressings were used instead of transparent semipermeable dressings. Transparent catheter covers were not available in the institution during the study period, so the dressing procedure followed the hospital's routine practice.

As in many behavioral RCTs, blinding of the children and the nurse performing the procedure was not possible. To minimize bias, the data were analyzed by an independent statistician who was blinded to group allocation. Since the study was

conducted in a single center, the results may not represent all pediatric oncology settings. A pilot study was not performed; instead, the procedures were standardized, and validated measurement tools were used.

In our clinic, HC dressings are routinely changed every two days, and most children have had many previous dressing experiences. This may have contributed to higher preprocedural fear levels, although baseline fear scores did not differ significantly between the groups. Baseline needle- or dressing-related fear was not evaluated separately. Usual care in the control group did not include a structured non-pharmacological method, and parent-reported outcomes were not collected. These points should be considered when interpreting the study results. Because all children had previous HC dressing experience, their past procedures may have influenced how they reported pain and fear during the study. This may have contributed to variability in individual responses.

IMPLICATIONS FOR NURSING PRACTICE

Pediatric oncology patients may experience fear and pain during routine medical procedures. Our results indicated that cartoon distraction was an effective technique for relieving pain and fear levels during HC dressing changes for pediatric oncology patients. Reducing the pain and fear associated with HC dressing changes in children is among the responsibilities of the nurse. Nurses can provide children with portable devices to watch cartoons during such procedures. This non-pharmacological method can be easily applied by nurses.

Information

No potential conflicts of interest were declared by the authors. The authors received no financial support for the research, authorship and/or publication of this article. of the research The costs were covered by the researchers. Ethics committee approval was obtained from the Akdeniz University Medical Faculty Clinical Research Ethics Committee (Date: 18.08.2021, Decision No: KAEK-610), before commencing the study. Written permission was obtained from the hospital where the study was performed. The children and their parent were informed about the study. Children and their parent were also informed that they could withdraw from the study at any time without explanation and their verbal and written consents were obtained. This study was registered in the Clinical Trial Registry (NCT05301374). All procedures performed in studies involving human participants were in accordance with the ethical standards and with the Helsinki Declaration. The study was presented as an oral presentation at the 68th Turkish National Pediatric Congress, 1st International Turkish National Pediatric Society (TNPS) Congress, 23rd National Pediatric Nursing Congress held in Antalya on 20-24 November 2024. It was also selected as the 3rd best oral presentation at the congress.

Author Contributions

Conceptualization: All authors; Methodology: All authors; Investigation: All authors; Collected the data: ME; Recruited the participants: ME; Data curation: All authors; Interpreted the data: All authors; Supervision and approved the final version of the manuscript: ME; Software: PB; Writing-review & editing and approved the final version of the manuscript: PB; Supervision, review & editing and approved the final version of the manuscript: EE.

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