

# The Effect of Different Training Programs Applied Prior to Surgical Operation on Anxiety Levels

Neziha Karabulut\*, Duygu Arıkan\*\*

\* PhD, Department of Surgical Nursing, College of Nursing, Atatürk University, Erzurum, Turkey

\*\* PhD, Department of Child Health Nursing, College of Nursing, Atatürk University Erzurum, Turkey

Correspondence Address:

Neziha Karabulut

Department of Surgical Nursing, College of Nursing, Atatürk University, Erzurum, Turkey

Telephone: +904422312360

Fax: +904422360984

E-mail: nezihek@myynet.com

## ABSTRACT

**Objective:** The study was carried out as a semi-experimental one to determine the effect on the post-operation and pre-operation state loss levels of the children and their parents of different training programs to be given to mothers and their children who would have an inguinal hernia operation.

**Method:** The study consisted of children who had been hospitalized at Medical centre of Atatürk University for inguinal hernia and their mothers. The sampling group included 90 children (30 for the control, 30 for the video and 30 for the booklet group). After the collection of the data, questionnaire form and State-Trait Anxiety inventory for children were used.

**Results:** In the video (VCD) group, there was found a mild and positive relation ( $r=.453$ ,  $P<0.05$ ) between the state loss scores of the children and mothers 24 hours before the operation.

**Discussion:** Training with the booklet and video was found out to decrease the state loss levels of mothers and children before and after the operation. However, training with video on children was found as more effective than the one with the booklet.

**Keywords:** anxiety, operation, different training, child

## ÖZET

### Ameliyat Öncesi Uygulanan Farklı Eğitim Yöntemlerinin Kaygı Düzeyine Etkisi

**Amaç:** Çalışma inguinal herni ameliyatı olan çocuk ve ailelerine verilen farklı eğitim programlarının preoperatif ve postoperatif kaygı düzeylerini belirlemek amacıyla yarı deneysel olarak yapılmıştır.

**Yöntem:** Çalışmayı inguinal herni nedeni ile Atatürk üniversitesi tıp fakültesine yatan çocuklar ve anneleri oluşturmaktadır. Örneklem grubunu 90 çocuk oluşturmaktadır (30'u kontrol, 30'u video, 30'u kitapçık grubu). Verilerin toplanmasında, çocuklar için ve yetişkinler için durumluk-süreklilik kaygı envanteri ve soru formu kullanılmıştır.

**Bulgular:** Video grubunda (VCD), ameliyattan 24 saat önceki anne ve çocuk arasındaki kaygı düzeyleri arasında pozitif ve orta düzeyde ilişki bulunmuştur ( $r=.453$ ,  $P<0.05$ ).

**Tartışma ve Sonuç:** Kitapçık ve video ile yapılan eğitim ameliyat öncesi ve sonrası anne ve çocuklar da durumluk kaygı düzeyi azaldığı bulunmuştur. Bununla birlikte, çocuklarda video ile yapılan eğitimin kitapçık ile yapılan eğitimdən çok daha etkili olduğu bulunmuştur.

**Anahtar Kelimeler:** kaygı, operasyon, eğitim, çocuk

## OBJECTIVE

Inguinal hernia is a common indication of abdominal operation in the childhood ages. It does not heal itself. Therefore, it needs to be treated by surgical methods without delay though it is not often urgent in

childhood (Hebra 2006).

Operation is a cause of psychological stress on the part of the patient. The patient hospitalized is absorbed by concerns over and fear of his or her disease and the hospital environment unfamiliar to him or her.

This case causes the child to suffer from considerable stress during treatment. So it is of importance and use to provide physical healing and continuity of sentimental development to the hospitalized children (Çavuşoğlu 2004).

Pre-surgical training and informative session is the first step in the psychological preparation of the patients (Lepczyk 1990, Miner 1990). The studies show that children's anxiety is often dependent on lack of communication and information. Patient training is, therefore, one of the significant responsibilities of nurses. Training reduces the health expenditure, patient's stress and anxiety and complication rates while it also increases the patient's knowledge, skill, endurance and positivist behavior (Gillis 1993, Salman 1993). Previous studies that have shown that preparation prior to surgery relieved children's anxiety (Brewer et al. 2006, Edwinson et al 1988).

It is assumed that the training programs prepared in accordance with the patients' needs will lead to the elimination of the patient's lack of information, to the reduction of the patient's and his or her family's anxiety, to a shorter period of time for discharge from hospital and to a reduced cost.

The objective of the study is to determine the effect of the training provided to the child and his or her family with different training methods prior to abdominal operation.

## METHOD

The study was intended and carried out as a semi-experimental study to determine the effect of different training programs that will be given to children to have an inguinal hernia operation and their mothers on their pre- and post-operation state anxiety levels.

The research was done in between May 2001 and September 2004. The sample of the research consists of the children hospitalized at the Yakutiye Research Hospital of Süleyman Demirel Medical Centre, Atatürk University to have an inguinal hernia operation as well as their mothers. The limit of the research was accepted as between 9 and 12 years of age by considering the age group to which the inventory could be applied and their ability to understand and perceive.

Sample selection was not preferred in the research due to the limited time and diminished number of cases. It is reported in literature that the number of the samples is to be 30 at least in experimental and control groups (Sümbüloğlu and Sümbüloğlu 1997, Aksa-koğlu 2001). Therefore, the data were collected till 90 patients were found, 30 for the control group, 30 for

the VCD (video) group and 30 for the booklet group.

The questionnaire form used in the collection of the data was prepared by means of the researcher by means of literature in such a way as to reveal the factors likely to affect the child's and mother's anxiety level and the informative knowledge about both (Alak 1992, Şenses 1997).

The anxiety level of mothers was evaluated by means of the revised STAI State-Trait anxiety inventory and that of children was evaluated with State-Trait anxiety inventory for children. Both of these inventories were developed by Spielberger. The adaptation of STAI to Turkish was done by Öner and Le Compte as well as its reliability and validity while that of State-Trait anxiety inventory for children was by Şeniz Özusta. The reliability coefficients determined with the alpha correlations in adaptation of STAI to Turkish were .83 and .92 while the one in the present study was .72. The reliability coefficients determined in State-Trait anxiety inventory for children were .82 for the state anxiety inventory and .72 in the present study (Öner and Compte 1983, Özusta 1995).

The questionnaire forms (information about the child and mother as well as state anxiety inventory for the children and adults) were applied to the control group three times; 48 and 24 hours before the operation and 24 hours after the operation.

The VCD (video) group was given the questionnaire form at their admission to the clinic and 48 hours before the operation and the same day they were made to watch VCD prepared to the literature. The child and mother were made to watch video in the computer room at the child surgery clinic. The total period of the video is 12 minutes. Afterwards, state anxiety inventory was applied to the children and adults 24 hours before and 24 hours after the operation.

Similarly, the questionnaire form was also applied to the booklet group 48 hours before the operation and the same day they were given the educational booklets. Training with booklet was performed individually in an empty room and lasted for 20 to 30 minutes. Later, state anxiety inventory was applied to the children and adults 24 hours before and 24 hours after the operation.

The video and booklet contain information regarding the physical structure of the hospital, hospital life, hospital staff, operation room, procedures to do at the recovery room and the tools.

## Statistical analysis

The data in the research were used to form a data-

**Table 1. The correlation between the state anxiety scores of the children and mothers in the control group 48 hours and 24 hours before the operation as well as 24 hours after the operation.**

CHILDREN'S STATE ANXIETY	MOTHER'S STATE ANXIETY			
	48 hours ago r	24 hours ago r	24 hours later p	
48 hours ago	-,018			p>0.05
24 hours ago		-,293		p>0.05
24 hours later			,256	p>0.05

**Table 2. The correlation between the state anxiety scores of the children and mothers in the video group 48 hours and 24 hours before the operation as well as 24 hours after the operation.**

CHILDREN'S STATE ANXIETY	MOTHER'S STATE ANXIETY			
	48 hours ago r	24 hours ago r	24 hours later p	
48 hours ago	-,060			p>0.05
24 hours ago		,453		p<0.05
24 hours later			,332	p>0.05

**Table 3. The correlation between the state anxiety scores of the children and mothers in the booklet group 48 hours and 24 hours before the operation as well as 24 hours after the operation.**

CHILDREN'S STATE ANXIETY	MOTHER'S STATE ANXIETY			
	48 hours ago r	24 hours ago r	24 hours later p	
48 hours ago	-,008			p>0.05
24 hours ago		,330		p>0.05
24 hours later			,020	p>0.05

base and turned into tables by using SPSS Windows 10.0 package program in the computer. Mauchly's variance analysis, Bonferroni correction analysis and Pearson correlation test were used in the evaluation of the data (Sümbüloğlu and Sümbüloğlu 1997, Aksa-koğlu 2001).

#### **Ethical Consideration**

All permission and consent was taken from the hospital and department concerned before initiating the study. In addition, the mothers and children were told about the aims of the study and the way to follow throughout it. They were also provided with any answer to the questions they had been wondering about.

Afterwards, the mothers and children were asked for their permission verbally. Upon their consent, the study was initiated.

#### **RESULTS**

It was determined through the study that of all three groups, the age, the child's hospital experience, the child's operation experience, location, the mother's age, the mother's educational level, the mother's career status, social insurance and the mother's hospital experience were similar, except the gender of the child and the mother's operation experience.

The correlation between the mothers' and children's state anxiety scores in the control group was found as

**Table 4. Comparison of the mean state anxiety scores of the children in the control and training groups 48 hours and 24 hours before the operation as well as 24 hours after the operation.**

<b>CHILDREN'S STATE ANXIETY SCORE</b>							
<b>CHILDREN</b>	<b>48 hours ago</b>			<b>24 hours ago</b>		<b>24 hours later</b>	
	N	Mean	SD	Mean	SD	Mean	SD
Control Group	30	38.13	5.85	40.37	5.68	30.50	7.08
<b>Mauchly's W=,798 sd=2 p&lt;0.05</b>							
Video Group	30	40.93	3.36	23.93	2.92	22.23	1.19
<b>Mauchly's W=,865 sd=2 p&lt;0.01</b>							
Booklet Group	30	34.70	3.65	28.60	3.92	27.40	3.94
<b>Mauchly's W=,923 sd=2 p&gt;0.05</b>							

**Table 5. Comparison of the mean state anxiety scores of the mothers in the control and training groups 48 hours and 24 hours before the operation as well as 24 hours after the operation.**

<b>MOTHER'S STATE ANXIETY SCORE</b>							
<b>MOTHERS</b>	<b>48 hours ago</b>			<b>24 hours ago</b>		<b>24 hours later</b>	
	N	Mean	SD	Mean	SD	Mean	SD
Control Group	30	45.33	10.39	54.23	7.03	31.33	9.97
<b>Mauchly's W=,914 sd=2 p&gt;0.05</b>							
Video Group	30	58.27	7.49	34.07	7.80	28.93	5.85
<b>Mauchly's W=,901 sd=2 p&lt;0.01</b>							
Booklet Group	30	53.60	13.62	36.93	8.42	28.20	4.80
<b>Mauchly's W=,268 sd=2 p&lt;0.01</b>							

statistically insignificant in three time periods ( $p>0.05$ ) (Table 1). The correlation between the mothers' and children's state anxiety scores in the video (VCD) group was found as statistically insignificant 48 hours before and 24 hours after the operation ( $p>0.05$ ), whereas this correlation was found statistically significant 24 hours before the operation ( $p<0.05$ ) (Table 2)

The correlation between the mothers' and children's state anxiety scores in the booklet group was found as statistically insignificant in three time periods ( $p>0.05$ ) (Table 3)

The mean state anxiety scores of the children in the control group were 38.13 (SS=5.85) 48 hours before the operation, 40.37 (SS=5.68) 24 hours before and 30.50 (SS=7.08) 24 hours after. However, the mean state an-

xiety scores of the children in the VCD group were 40.93 (SS=3.36) 48 hours before the operation, 23.93 (SS=2.92) 24 hours before and 22.23 (SS=1.19) 24 hours after. The mean state anxiety scores of the children in the booklet group were 34.70 (SS=3.65) 48 hours before the operation, 28.60 (SS=3.92) 24 hours before and 27.40 (SS=3.94) 24 hours after. Comparison of the state anxiety scores of the children in the group according to time was found as statistically significant in the children in the control group ( $p<0.05$ ) and in the VCD group ( $p<0.01$ ) and as statistically insignificant in the booklet group ( $p>0.05$ ) (Table 4).

The mean state anxiety scores of the mothers in the control group were 45.33 (SS=10.39) 48 hours before the operation, 54.23 (SS=7.03) 24 hours before and

31.33 (SS=9.97) 24 hours after. However, the mean state anxiety scores of the mothers in the VCD group were 58.27 (SS=7.49) 48 hours before the operation, 34.07 (SS=7.80) 24 hours before and 28.93 (SS=5.85) 24 hours after. The mean state anxiety scores of the mothers in the booklet group were 53.60 (SS=13.62) 48 hours before the operation, 36.93 (SS=8.42) 24 hours before and 28.20 (SS=4.80) 24 hours after. Comparison of the state anxiety scores of the mothers in the group according to time was found as statistically significant in the VCD and booklet groups ( $p<0.01$ ). (Table 5)

## DISCUSSION

72.2% of the children included in the study were boys. There appeared a statistically significant difference in the comparison of all three groups according to gender ( $\chi^2=1.440$ ,  $p<0.05$ ). This finding is supported by literature saying that inguinal hernia is particularly more frequent in boys (Hebra 2006).

It was determined in the study that 7 of the mothers in the control group (23.4%) had an experience of operation while 8 of the mothers in the VCD and booklet group (26.7%) had an operative experience. The difference between the groups was found as statistically significant ( $\chi^2=21.511$ ,  $p<0.05$ ).

There was a difference between the children's gender and the mothers' operative experience. However, it was determined in the studies made before that the children's gender (Peretz and Zadik 1994, Özusta 1995) and the mothers' operative experience (Öner and Compte 1983) had no significant effect on the child's and mother's anxiety level.

When the correlation between the mothers' and children's state anxiety inventory scores was analyzed, there was found no significant relation between the children's and mothers' state anxiety inventory scores in the control and booklet groups 48 hours and 24 hours before the operation as well as 24 hours after the operation (Table 1, 3).

In the video group, however, there was found no significant relation between the children's and mothers' state anxiety inventory scores 48 hours before the operation and 24 hours after the operation, whereas there was found a positively medium relation between the children's and mothers' state anxiety inventory ( $r=.453$ ,  $p<0.05$ ) (Table 2). In the VCD group, the children's and mothers' state anxiety levels (Table 4, 5) had fallen 24 hours before the operation, which means that the children and mothers affected one another positively in the video group. This result also points to

the importance of audio-visual tools for the pre-operation training to be given to the children of this age group. The fact that the children's and mothers' state anxiety levels affect one another in the pre-operation period shows that mothers have to be included in all the care and training activities to be made for the children.

While the children's state anxiety score was the highest at the beginning (48 hours before the operation) in video (VCD) group, it was the lowest in the booklet group (Table 4). The anxiety scores of the children in the control group increased 24 hours before the operation but this score decreased in the video and booklet groups. The state anxiety scores of the children in the VCD group 24 hours before and 24 hours and after the operation decreased more than those of the other groups' children. This finding indicates that training with booklet and VCD diminishes the children's state anxiety levels and the most effective training is the one with VCD. It can, thus, be judged that training with VCD is more effective in decreasing the children's state anxiety levels as it appeals to eye and ear.

It is reported in literature that people can remember 10 % of what they read, 20% of what they hear, 30% of what they see and 50% of what they both see and hear at a fixed period of time (Ergin 1995).

The findings obtained in this research comply with the results of the studies indicating that training with visual tools is more effective (Melamed and Siegel 1975, Hermann and Kreuser 1989). It was determined that the children and mothers in the control group had an increased state anxiety level 24 hours before the operation but a decreased one after the operation (Table 4, 5). The fact that the state anxiety levels of the children and mothers in the control group decreased 24 hours after the operation is explicable by the comfort and relief of the stress-causing factor being eliminated, namely the operation being realized.

In the study by Kain et al. (1996), it was reported that children's pre-operation anxiety level had increased. In another study by Bevan et al. (1990), it was determined that the state anxiety levels of the mothers whose children were to be operated were high.

Pektekin (1981) and Tourigny (1990) reported in their studies that hospitalization and indication of operation was an anxiety-arousing state for children and mothers. The findings of the present study bear resemblances and parallelism to these findings.

A decrease was ensured in the mothers' state anxiety score averages by means of the training with video and booklet and the difference between them was fo-

und as statistically significant ( $p<0.01$ ) (Table 5). Of the groups, the highest decrease in the anxiety level was found in the video group. In the studies by Robinson and Kabayashi (1991), Mecker (1989), Şenses (1997), the training given to mothers had a diminishing effect. The findings of the present study bear resemblances and parallelism to these findings.

## CONCLUSION

It was determined that mothers' and children's state anxiety levels did not affect one another in the control and booklet groups, whereas there was found a medium positive correlation between the state anxiety scores of the mothers and children in the video group 24 hours before the operation. A decrease was ensured in the mothers' state anxiety score averages by means of the training with video and booklet and the difference between them was found as statistically significant. The study concluded that training with video was more effective on children and the one with both the booklet and video was more effective on mothers. Results from this study showed that nurses should refer to video and booklets in training the children and mother, and should use video for the training of children.

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