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**Head: Postoperative Recovery in Children: Turkish Cross-Cultural Adaptation**

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### **Ethics Approval Statement**

To conduct the Turkish adaptation study of the scale, permission and scale-related documents were obtained from Ann-Cathrine Bramhagen, via e-mail. Approval was obtained from the Non-Invasive Clinical Studies Ethics Committee of Zonguldak Bülent Ecevit University (decision date: 22/07/2020, decision no: 2020/15). Written permission was received from the institution where the study would be conducted. The purpose of the study was explained to the children and their parents, and written consent was obtained from the parents.

## **Postoperative Recovery in Children: Turkish Cross-Cultural Adaptation**

### **Abstract**

**Background:** Postoperative recovery is an individual process involving subjective experiences. The fact that children still experience high rates of complications associated with surgery requires the discovery of new evaluation methods. No studies in Turkey have reported a measurement instrument evaluating postoperative recovery in children. The purpose of this methodological study is to cross-culturally adapt the Postoperative Recovery in Children (PRiC) instrument into the Turkish language and test the validity and reliability of its Turkish version.

**Methods:** One hundred children (81% male) aged 4 to 12 years undergoing tonsillectomy at a hospital were included. The self-administered PRiC and Parents' Postoperative Pain Measure (PPPM) instruments were used to collect data on the 1st, 4th, and 10th days after surgery. Internal consistency, parallel-forms reliability, content validity, and construct validity of the instruments were determined.

**Results:** PRiC had a three-factor structure, and these factors explained 68% of the total variance in the variable it measured. It showed a high level of internal consistency (Cronbach's  $\alpha=0.842$ ). The item-total score correlation coefficients for 23 of the items were  $\geq 0.30$ . PRiC was moderately correlated with PPPM on the 1st day after surgery ( $r=0.64$ ,

p<0.01), on the 4th day after surgery (r=0.69, p<0.01), and on the 10th day after surgery (r=0.51, p<0.01).

**Conclusion:** The Turkish version of PRiC has good reliability and validity. A validity and reliability study of PRiC to assess children's postoperative recovery in the context of different surgical operations should be conducted.

**Keywords:** Children, instrument, postoperative recovery, validity, and reliability

## INTRODUCTION

Tonsillectomy (with or without adenoidectomy) is the most frequently performed surgical operation in children younger than 15 years old.<sup>1</sup> After tonsillectomy, children may experience insomnia, pain, nausea, vomiting, repeated hospitalizations, and sudden changes in their medical statuses. Approximately 25% of children undergoing tonsillectomy operations can still experience pain on the 10th day after surgery.<sup>2</sup> If children continue to experience complications after surgery, this may prolong their recovery process.<sup>3</sup>

Delayed postoperative recovery creates a burden on both children and their families. It makes it difficult for the child to return to their routine and reduces their well-being even further. Therefore, recovery after tonsillectomy is desired to occur as soon as possible.<sup>4</sup> The first step in the management of postoperative recovery is the accurate and effective evaluation of postoperative recovery.<sup>5</sup> Considering postoperative pain, anxiety, and other experiences among children, the best assessment method is "self-reporting", which is accepted as the gold standard.<sup>6,7</sup> The development of valid and reliable assessment tools for self-reported postoperative recovery in children (aged 4-12 years) after tonsil surgery has been an important step towards improving children's recovery. For this reason, The Postoperative Recovery in Children (PRiC) instrument was developed by Bramhagen et al.,<sup>8</sup> tested in a Swedish population of children undergoing tonsil surgery, and found to be valid and reliable.

There is also a measurement instrument that evaluates postoperative pain in children and reports postoperative complications as in PRiC (the Parents' Postoperative Pain Measure-PPPM) that has been tested in Turkey. PPPM, originally developed by Chambers et al.<sup>9</sup> is a valid and reliable instrument that is ready to be used in Turkish. The Turkish version of PPPM can be used in children aged 7-12 years to evaluate postoperative pain.<sup>10</sup> It may not be applicable to younger age groups. This limits the assessment of pain and complications that may occur due to pain in children in younger age groups.

In the review of studies in the literature in Turkish, no measurement instruments that examine factors other than pain in this context could be found. No studies in Turkey reported a measurement instrument evaluating postoperative recovery in children. The assessment of postoperative recovery in children may be difficult after tonsil surgery. Keeping in mind the substantial need for such scales and the usage frequency of these scales, there is an increasing need to adapt health status measures for the comparison of responses across populations divided by language and culture.<sup>11,12</sup> In this context, there is a need for measurement instruments that can be used for the self-reports of children and are supported with visual materials that are suitable for their developmental characteristics.<sup>8,13</sup> The purpose of this methodological study is to cross-culturally adapt the Postoperative Recovery in Children (PRiC) instrument that is used to evaluate postoperative recovery in children into the Turkish language and test the validity and reliability of its Turkish version. The research questions to be answered in line with this aim were the following:

- Is the Turkish version of the Postoperative Recovery in Children (PRiC) instrument a valid instrument?
- Is the Turkish version of the Postoperative Recovery in Children (PRiC) instrument a reliable instrument?

## **METHOD**

## **Ethics**

Permission and documents related to the scale were obtained from Ann-Cathrine Bramhagen via e-mail to carry out the Turkish adaptation study of the original scale. Approval was obtained from an ethics committee (Decision Date: 22/07/2020, Decision No: 2020/15). Written permission was obtained from the institution where the study was to be conducted. The purpose of the study was explained to the parents and the children, and written consent was obtained from the parents.

## **Participants**

For sample sizes in scale validation studies, it is recommended to exceed 5 to 10 times the number of items in the examined scale.<sup>14</sup> Because the original version of PRiC consists of 23 items, we included 230 children aged 4 to 12 years who had undergone tonsillectomy in a hospital from August 2020 to June 2022. The inclusion criteria for the study were (1) being at the age of 4 to 12 years, (2) undergoing tonsillectomy, (3) voluntary participation for parents, and (4) having the written consent of parents. Children with mental or neurological disabilities were excluded from the study.

## **Data Collection**

A total of 230 children were invited to participate. The participants were randomly divided into two groups: one group received the text form of the scale, and the other group received the visual form of the scale.<sup>8</sup> The assignment of children to groups was carried out using a computer program (<https://www.randomizer.org/>) to ensure confidentiality and avoid bias. The statistician who had performed the randomization process shared the obtained randomization data with the administrators of the institution where the study was conducted. The authors did not know which group the children belonged to.

Upon being discharged from the hospital, the children received the instrument for reporting their postoperative recovery on the 1st (T1), 4th (T2), and 10th (T3) days after surgery. The

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data were collected face to face on the 1st day after surgery, when the patients were still in hospital settings. On the other hand, the data were collected online and by telephone interviews on the 4th and 10th days after surgery. The number of children who answered the scale questions completely decreased to 191 on the 4th day and 157 on the 10th day after surgery. The 4th and 10th day measurements were used to evaluate the correlation between the outcomes of PRiC and the Parents' Postoperative Pain Measure (PPPM). In the validation study of PRiC,<sup>8</sup> the domains and values of the instrument were only evaluated on the 1st day after surgery. We followed a similar path. The data were collected using a Personal Information Form, the Postoperative Recovery in Children instrument, and the Parents' Postoperative Pain Measure.

**Personal Information Form:** The form included questions on the age and sex of the children, as well as information on the characteristics of their surgical operations.

**Postoperative Recovery in Children (PRiC):** In this study, postoperative recovery was measured using PRiC, which was filled out by the children themselves or with the help of their parents. PRiC includes 23 items, 21 items about different aspects of recovery in general and 2 items that are specific to tonsil surgery (earache and blood in the mouth). The items are scored based on the last 24 hours on a four-point scale: 1=not at all, 2=a little, 3=much, and 4=very much, where "very much" indicates the lowest level of recovery. PRiC also includes one item of a more general nature that addresses the child's present general health, and its response options are 4=very good, 3=pretty good, 2=pretty bad, or 1=very bad.<sup>8</sup>

**Parents' Postoperative Pain Measure (PPPM):** This scale was developed by Chambers et al.<sup>9</sup> to enable parents to assess their child's postoperative pain. PPPM allows the evaluation of pain at three different times in the day: breakfast-lunch, lunch-supper, and supper-bedtime. The scale contains 15 items each of which elicits a response of "Yes" or "No." Items receiving a "Yes" response are scored 1, and the maximum possible score on the scale is 15.

Scores of 6–15 on the scale are interpreted to mean that the child has a pain of clinical significance, and scores of 0–6 indicate that the child has a pain that does not require intervention.<sup>10</sup> The Cronbach's alpha coefficient for the overall scale in this study was 0.818.

**Participation:** The children's participation in the study was evaluated, and they were asked a question about their self-report on postoperative recovery. This question was “Did you answer the questions yourself?” If the child's answer was no, the next question was “who helped you?”<sup>8</sup>

### **Cross-Cultural Adaptation**

We used the guideline for the process of cross-cultural adaptation of self-report measures. Initial translation, synthesis of the translations, back translation, test of the prefinal version, and adaptation process were our steps.<sup>11,12</sup>

#### Translation

The first stage in adaptation was forward translation. The translation and back-translation procedure was applied to establish the content validity of PRiC. First, the English version of PRiC was independently translated into Turkish by three bilingual native Turkish-speaking translators to produce a consensus version.<sup>11</sup> The translators each produced a written report of the translation that they completed. The three translators gathered to synthesize the results of their translations. In the next step, completely blind to the original version, two translators then translated the questionnaire back into its original language. The back-translations were produced by two persons with the source language (English) as their mother tongue. The two translators were not aware or informed of the concepts explored, and they preferably did not have a medical background. Once consensus was reached, the draft scale was produced.

#### Expert Committee Review (Content Validity)

Nine experts in the fields of pediatrics, pediatric nursing, and child development were consulted for the content validity analyses of the Turkish version of PRiC.<sup>11</sup> The experts were

asked to evaluate the scale items with a four-point rating system (1=not relevant, 2=somewhat relevant, 3=quite relevant, 4=highly relevant). The Lawshe content validity index determination method was used for the item-level content validity index (CVI) and the scale-level CVI of PRiC. Pilot Implementation

The final stage of the adaptation process was pilot implementation. This method for a new questionnaire seeks to use the prefinal version in children from the target setting.<sup>11</sup> To test the comprehensibility of the Turkish form, a pilot implementation was made with the participation of 30 children aged 4-12 years undergoing surgeries who agreed to participate by approaching children and parents. Each child completed the questionnaire and was interviewed to understand what the children thought was meant by each item and the chosen response.

### **Statistical Analysis**

Descriptive statistics are presented as frequencies and percentages, arithmetic means, and medians. The data were tested for reliability (internal consistency) and validity (content and construct validity) using the IBM SPSS Version 22.0 package program. CVR and CVI values were analyzed to determine content validity, whereas Bartlett's Test of Sphericity and Keiser-Mayer-Olkin (KMO) tests were implemented to determine the adequacy of the data and sample size for factor analysis. Principal component analysis was used in the exploratory factor analysis (EFA) phase. The validity of the construct that was obtained as a result of the EFA was tested by conducting a confirmatory factor analysis (CFA). Internal consistency was assessed using the Cronbach's alpha coefficient. The relationships between the total PRiC and PPPM (parallel form) scores of the children were evaluated with the Pearson's correlation coefficient. To determine the correlations, we used the data of the children aged 7-12 years for PRiC and PPPM. The statistical significance of the results was determined in a 95% confidence interval, and  $p < 0.05$  was accepted as statistically significant.



## RESULTS

### Demographics

All children who underwent tonsillectomy operations and participated in the study (n=230) answered the instrument on the first day after surgery. In total, 51.4% (n=118) received a text-based scale form, and 48.6% (n=112) received a photo-based scale form.

The number of children who answered the scale questions completely decreased to 191 on the 4th day and 157 on the 10th day after surgery. On the 4th day, 99 children were in the text group, and 92 children were in the visual group. On the 10th day, 79 children were in the text group, and 78 children were in the visual group. There were no significant differences between the text and visual groups with respect to their age, sex, surgical procedure, or mean total PRiC scores at T1, T2, or T3 ( $p>0.05$ ) (Table 1).

### Participation

For the question of whether the children had chosen the answers themselves, 64% said 'yes' (n=147), and 36% said 'no' (n=83). There was a significant difference ( $p<0.001$ ) in terms of age between those answering 'yes' (mean age 7.9 years) and those answering 'no' (mean age 5.5 years).

### Postoperative recovery

The median responses to different items varied between "not at all" and "much". The mean per-item score values were between 1.1 (had blood in my mouth) and 2.8 (attending daycare/school). On the 1st day after surgery, according to their responses to the scale, the majority of the children felt "pretty well". On the first day after surgery, 57.3% of the children experienced a sore throat. While 71.4% of the children said they had difficulty eating, based on their statements, 57.5% had difficulty playing/being active, 52.6% had difficulty speaking, 47.5% had difficulty listening, 45.9% had difficulty in daily care/participation at school, and 40.6% had difficulty breathing (Table 2).

### **Content Validity**

For content validity, PRiC was presented to nine experts. The CVI values of the items were analyzed according to the evaluations of the experts. The CVI values of the individual items varied from 0.75 to 1.0, while the scale-level CVI value of PRiC was 0.96.

### **Construct Validity**

In this study, the principal component analysis method was used to determine the scale's construct validity. The Kaiser-Meyer-Olkin (KMO) statistic of the scale was found as 0.784. In the Bartlett's test of sphericity, the  $\chi^2$  value was 148.291, and it was found statistically significant ( $p < 0.001$ ). PRiC was determined to have a three-factor structure with eigenvalues greater than one for each factor. These three factors explained 68% of the total variance in the measured variable (Table 2).

According to the CFA, the following goodness-of-fit indices were obtained:  $\chi^2/df=2.34$ , RMSEA (root mean square error of approximation)=0.005, SRMR (standardized root mean square residual)=0.017, NFI (normed fit index)=0.94, CFI (comparative fit index)=0.95, AGFI (adjusted goodness of fit index)=0.97, and GFI (goodness of fit index)=0.93. The goodness of fit index values obtained as a result of the CFA were very good.

### **Reliability**

In this study, the Cronbach's alpha coefficient for the overall PRiC was found as 0.842. For the dimensions of physical comfort, physical independence, and emotional state, the Cronbach's alpha coefficients were 0.829, 0.726, and 0.721, respectively. The item-total score correlation coefficients for the 23 items were between 0.397 and 0.629 (Table 3). After the Pearson's correlation analysis, it was found that PRiC was moderately correlated with PPPM at T1 ( $r=0.64$ ,  $p < 0.01$ ), T2 ( $r=0.69$ ,  $p < 0.01$ ), and T3 ( $r=0.51$ ,  $p < 0.01$ ) (Table 4).

### **DISCUSSION**

The purpose of this study was to cross-culturally adapt PRiC, which is used for the assessment of postoperative recovery in children who undergo tonsillectomy, into Turkish and test its Turkish version's validity and reliability. The Turkish version of PRiC had a three-factor structure. It showed high internal consistency. These results showed that the Turkish PRiC instrument had high validity. Moreover, PRiC was moderately correlated with PPPM.

In this study, the item-total score correlation coefficients for all items were greater than  $\geq 0.30$ .

The item-total score correlation coefficient of an item shows the extent to which the item in question measures the quality that is intended to be measured by the remaining items on the scale. Low coefficients indicate that the item in question has a small contribution to the scale.<sup>15</sup> The desired condition for the assessment of reliability in this context is that the item-total score correlation coefficient of each item is positive and greater than 0.20. Items that do not meet this criterion are removed, and the reliability of the scale is recalculated based on the remaining items.<sup>16</sup> Bramhagen et al.<sup>8</sup> reported in the original scale development study of PRiC that the item-total score correlation coefficients of all items were greater than 0.20. In this study, the values of these coefficients were higher.

In this study, the correlation between PRiC and PPPM, which is used to evaluate pain in children based on changes in their behaviors in the postoperative period, was analyzed. PRiC was moderately correlated with PPPM at T1, T2, and T3. Among the methods that are used to test the reliability of a scale, parallel forms reliability testing is a method that can be used when there is an alternative or equivalent measurement instrument to the scale being tested or when such an instrument is created. This method is used when the researcher aims to show the strength of the scale they are testing.<sup>15</sup> PRiC is a self-report tool, while PPPM involves an evaluation made by parents. Furthermore, PPPM evaluates postoperative pain in children and reports possible postoperative complications as in PRiC, and it can be used in children aged 7-12 years to evaluate postoperative pain.<sup>10</sup> This age group limits the assessment of pain and

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complications that may occur due to pain in children in younger age groups. For this reason, we used the data of the children aged 7-12 years for PRiC and PPPM to evaluate parallel forms reliability.

In this study, the Cronbach's alpha coefficient for the overall scale and the scale dimensions of physical comfort, physical independence, and emotional state were high. Based on these values, it may be stated that PRiC had "high reliability".<sup>17</sup> In the original development study of PRiC, the Cronbach's alpha value of the overall scale and the scale dimensions of physical comfort, physical independence, and emotional state were moderate.<sup>8</sup> In particular, the internal consistency coefficient for the emotional state dimension that was found in this study was higher than that in the original development study of PRiC.

Considering that tonsillectomies are performed highly frequently in children, there is a substantial need for measurement instruments like PRiC. Thus, it is believed that PRiC, which was tested for validity and reliability in Turkish in this study, will be used frequently and be useful in the assessment of postoperative recovery. We need to mention some advantages compared to PPPM. PPPM is a textual measurement tool evaluated by parents, and its main purpose is to evaluate postoperative pain, even if it includes postoperative complications in its items.<sup>9,10</sup> PRiC is a self-report tool in this age group. Self-report is a valuable evaluation technique in children.<sup>6,7</sup> In this study, 64% of the children were able to answer the scale questions themselves. This rate was quite good. The children who could answer the scale questions themselves were older. Additionally, the fact that the scale also has a visual form will make it easier for it to be used in younger children.<sup>8,13</sup> Finally, the inclusion of all complications that may occur after surgery, including pain, expands the usage area of PRiC.<sup>8</sup>

In this study, we cross-culturally adapted PRiC into the Turkish language, and we aimed to test the validity and reliability of PRiC in children who had undergone tonsillectomy. In future studies, its applicability in daily clinical practice can be tested. Thus, pediatric

healthcare professionals could use PRiC to assess postoperative recovery among children who are 4 to 12 years old who undergo tonsillectomy in routine clinical settings. A validity and reliability study of PRiC to assess children's postoperative recovery in the context of different surgical operations should also be conducted. There may be differences in PRiC items and dimensions compared to other surgical procedures. Testing the validity and reliability of PRiC in different surgical procedures will ensure its widespread use.

## CONCLUSION

The results of this study demonstrated that PRiC is a valid and reliable tool for evaluating postoperative recovery in only for Turkish children aged 7 to 12 undergoing tonsillectomies (parallel forms with PPPM). Our study suggested that PRiC is a brief, practical, age-appropriate, self-reported, easily applicable, valid, and reliable tool in Turkish. The PRiC instrument may also have some utility in research as a tool for measuring outcomes. However, further studies are needed to evaluate the instrument in other populations of children and adolescents and different surgical procedures.

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**Tablo 1. Demographic characteristics of the participants according to text and photo groups**

	1st day after the surgery		4th day after the surgery		10th day after the surgery	
	Text group	Photo group	Text group	Photo group	Text group	Photo group
	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD
<b>Age (year)</b>	7.2 ± 1.48	7.4 ± 1.71	8.2 ± 0.94	7.9 ± 1.59	7.4 ± 1.93	7.8± 1.47
	(4 - 12)	(4 - 12)	(4 - 12)	(4 - 12)	(4 - 12)	(4 - 12)
<b>Difference</b>	t = 1.402, p = 0.935		t = 1.008, p = 0.435		t = 1.522, p = 0.881	
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
<b>Sex</b>						
<b>Girl</b>	64 (57.6)	58 (48.7)	46	51	39	47
<b>Boy</b>	47 (42.4)	61 (51.3)	39	55	34	37
<b>Difference</b>	$\chi^2 = 1.354, p = 0.175$		$\chi^2 = 1.571, p = 0.467$		$\chi^2 = 1.602, p = 0.872$	
<b>Surgical procedure</b>						
<b>Tonsillectomy</b>	118 (100.0)	112 (100.0)	99 (100.0)	92 (100.0)	79 (100.0)	78 (100.0)

t = Student t test,  $\chi^2$  = Chi-Square Test



**Table 2. The results of the individual items in the postoperative recovery in children, frequencies and mean**

	<b>Not at all</b>	<b>A little</b>	<b>Much</b>	<b>Very much</b>	<b>Median</b>	<b>Mean</b>
<b>Postoperative Recovery in Children</b>	<b>n (%)</b>	<b>n (%)</b>	<b>n (%)</b>	<b>n (%)</b>		
During the last day/night (within the last 24 hours)						
Have I...						
felt like vomiting	148 (64.3)	74 (32.3)	6 (2.6)	2 (0.8)	Not at all	1.3
thrown up	208 (90.4)	11 (4.9)	6 (2.6)	5 (2.1)	Not at all	1.1
been feeling cold	164 (71.4)	26 (11.3)	26 (11.3)	14 (6.0)	Not at all	1.5
been dizzy	129 (56.2)	73 (31.7)	19 (8.2)	9 (3.9)	Not at all	1.1
had a sore throat	12 (5.2)	38 (16.7)	132 (57.3)	48 (20.8)	Much	2.7
had a stomach ache	161 (69.9)	42 (18.4)	18 (7.8)	9 (3.9)	Not at all	1.6
had an ear ache	158 (68.8)	47 (20.4)	13 (5.6)	12 (5.2)	Not at all	1.1
had a headache	173 (75.2)	46 (18.8)	12 (5.2)	2 (0.8)	Not at all	1.1
felt sad	155 (67.3)	65 (28.2)	7 (3.0)	3 (1.3)	Not at all	1.3
had frightening dreams	208 (90.6)	16 (6.9)	5 (2.1)	1 (0.4)	Not at all	1.7
had difficulty peeing	185 (80.6)	29 (12.6)	8 (3.4)	8 (3.4)	Not at all	1.1

had difficulty pooping	173 (75.4)	44 (19.1)	8 (3.4)	5 (2.1)	Not at all	1.1
had blood in my mounth	137 (59.5)	81 (35.3)	9 (3.9)	3 (1.3)	Not at all	1.1
Have I had difficulty...						
breathing	20 (8.6)	15 (6.5)	102 (44.3)	93 (40.6)	Much	2.7
sleeping	5 (2.1)	67 (29.3)	145 (63.0)	13 (5.6)	Not at all	1.1
eating	32 (13.9)	164 (71.4)	27 (11.7)	7 (3.0)	A little	1.8
playing/being active	53 (23.0)	132 (57.5)	39 (16.9)	6 (2.6)	A little	1.6
resting	89 (38.6)	109 (47.5)	32 (13.9)	0 (0.0)	A little	1.5
talking	57 (24.9)	121 (52.6)	41 (17.8)	11 (4.7)	A little	1.5
brushing my teeth	143 (62.3)	53 (23.0)	29 (12.6)	5 (2.1)	Not at all	1.1
washing myself/showering	209 (90.8)	17 (7.5)	3 (1.3)	1 (0.4)	Not at all	1.3
attending daycare/school	12 (5.2)	101 (43.9)	104 (45.3)	13 (5.6)	Much	2.8
	<b>Very well</b>	<b>Pretty well</b>	<b>Pretty bad</b>	<b>Very bad</b>		
	<b>n (%)</b>	<b>n (%)</b>	<b>n (%)</b>	<b>n (%)</b>		
At the moment I feel	31 (13.4)	159 (69.3)	21 (9.1)	19 (8.2)	Pretty well	2.0

**Table 3. Item-total correlations and one-factor loadings in three dimensions of PRiC**

Items	KMO	Bartlett's Test of Sphericity	Variance Explained by Component	Dimensions					
				Physical Comfort Item-Total Correlations	One- Factor Loadings	Physical Independence Item-Total Correlations	One- Factor Loadings	Emotional State Item-Total Correlations	One- Factor Loadings
During the last day/night (within the last 24 hours)	0.784	X <sup>2</sup> : 148.291+	67.927						
Have I...									
felt like vomiting				0.397	-0.464				
thrown up				0.574	-0.597				
been feeling cold				0.599	-0.601				
been dizzy				0.309	-0.538				
had a sore throat				0.478	-0.452				
had a stomach ache				0.509	-0.399				

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had an ear ache	0.444	-0.555		
had a headache	0.497	-0.468		
felt sad			0.397	-0.702
had frightening dreams			0.458	-0.622
had difficulty peeing	0.445	-0.399		
had difficulty pooping	0.533	-0.371		
had blood in my mouth	0.546	-0.645		
Have I had difficulty...				
breathing	0.470	-0.812		
sleeping	0.596	-0.719		
eating	0.529	-0.493		
playing/being active			0.453	-0.383
resting	0.629	-0.448		
talking			0.626	-0.745

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brushing my teeth		0.463	-0.732	
washing		0.439	-0.778	
myself/showering				
attending		0.515	-0.483	
daycare/school				
At the moment I feel				0.518 -0.653
<b>Cronbach Alfa Value</b>			0.726	0.721
<b>(Dimensions)</b>	0.829			
<b>Cronbach Alfa Value</b>			0.842	
<b>(Total)</b>				

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PRiC: Postoperative Recovery in Children; KMO, Kaiser-Mayer-Olkin; † p<0.001

**Tablo 4. Correlations between Postoperative Recovery in Children and Parents' Postoperative Pain Measure**

<b>Scales and Assessment Times</b>	<b>PRiC at T1 (n = 198)</b>	<b>PRiC at T2 (n = 177)</b>	<b>PRiC at T3 (n = 139)</b>
<b>PPPM at T1</b>	0.64 <sup>†</sup>	NA	NA
<b>PPPM at T2</b>	NA	0.69 <sup>†</sup>	NA
<b>PPPM at T3</b>	NA	NA	0.51 <sup>†</sup>

PRiC: Postoperative Recovery in Children; PPPM: Parents' Postoperative Pain Measure; T1: 1st day after the surgery; T2: 4th day after the surgery; T3: 10th day after the surgery; NA, not applicable at this time point, n= between the ages of 7-12 among the participants

<sup>†</sup>  $p \leq 0.001$