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RESEARCH

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## CHILDREN ANXIETY RATING HOSPITALIZED USING THE TOOL CHILD DRAWING: HOSPITAL

Avaliação da ansiedade de crianças escolares hospitalizadas utilizando o instrumento Child Drawing: hospital

Evaluación de ansiedad de escolares hospitalizados utilizando el instrumento Child Drawing: hospital

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### ABSTRACT

**Objective:** to evaluate and verify factors that could influence the degree of anxiety in hospitalized children.

**Methods:** cross-sectional study conducted in two hospitals in São Paulo, in the Emergency and Pediatric Hospitalization between May-October/2015 and October/2016-June/2017. Children who were hospitalized for at least two hours and who had undergone an invasive procedure were included. The degree of anxiety was assessed by the instrument Child Drawing: Hospital. The t, Kruskal-Wallis and Spearman correlation tests were used for statistical analysis, considering significance 5%. **Results:** eighty-seven children were included, most of them with low anxiety. The mean score was higher among children with 6 and 8 years old, boys who were hospitalized for chronic reasons. **Conclusion:** children had low anxiety score and no related factors that could influence it. However, assessing the anxiety experienced by the child during hospitalization can advance measures to minimize the effects caused by it.

**DESCRIPTORS:** Anxiety; Hospitalization; Child, hospitalized; Pediatric nursing; Nursing assessment.

### RESUMO

**Objetivo:** avaliar e verificar fatores que poderiam influenciar no grau de ansiedade em escolares hospitalizados. **Métodos:** estudo transversal realizado em dois hospitais de São Paulo, no Pronto Socorro e Internação Pediátrica entre maio-outubro/2015 e outubro/2016-junho/2017. Foram incluídas crianças que estavam internadas ao menos duas horas e que tinham sido submetidas a procedimento invasivo. O grau

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de ansiedade foi avaliado pelo instrumento *Child Drawing:Hospital*. Utilizou-se os testes *t*, *Kruskal-Wallis* e de correlação de *Sperman*, para análise estatística, considerando significância 5%. **Resultados:** incluiu-se 87 crianças, sendo que a maioria apresentou baixo grau de ansiedade. A média do escore foi maior entre os meninos de 6 e 8 anos que foram internados por motivos crônicos. **Conclusão:** as crianças apresentaram escore de ansiedade baixo e não identificou-se fatores relacionados que poderiam influenciar o mesmo. Porém, avaliar a ansiedade vivenciada pela criança durante a hospitalização poderá antecipar medidas para minimizar os efeitos causados pela mesma.

**DESCRITORES:** Ansiedade; Hospitalização; Criança hospitalizada; Enfermagem pediátrica; Avaliação em enfermagem.

## RESUMEN

**Objetivo:** evaluar e verificar factores que podrían influir en el grado de ansiedad en niños hospitalizados. **Métodos:** estudio transversal realizado en dos hospitales de São Paulo, en la Emergencia y Unidad de Hospitalización Pediátrica entre mayo-octubre/2015 y octubre/2016-junio/2017. Se incluyeron niños hospitalizados y que se habían sometido a procedimiento invasivo. El grado de ansiedad fue evaluado por el *Child Drawing:Hospital*. Las pruebas de correlación *t*, *Kruskal-Wallis* y *Sperman* se utilizaron para el análisis estadístico, considerando la significación del 5%. **Resultados:** se incluye 87 niños, la mayoría tenían bajos niveles de ansiedad. La media puntuación fue mayor entre los niños de 6 y 8 años que fueron hospitalizados por razones crónicas. **Conclusión:** los niños tenían baja ansiedad y no se identificaron factores relacionados que podrían influir en el mismo. La evaluación de la ansiedad experimentada por el niño durante la hospitalización puede anticipar medidas para minimizar los efectos causados por él.

**DESCRIPTORES:** Ansiedad; Hospitalización; Niño hospitalizado; Enfermería pediátrica; Evaluación en enfermería.

## INTRODUCTION

Hospitalization represents, for children, a hostile and unusual event in their routine. Moreover, it is submitted to several procedures that can cause pain, physical and psychological suffering. In this sense, the child can manifest insecurity and anxiety behaviors, such as requesting attention, crying frequently, physically attacking other people, feeling inhibited to play, destroying toys, distrusting people, among other manifestations.<sup>1-4</sup>

The school-aged child can present some understanding of the disease but is vulnerable to events that diminish their sense of control. The hospital routine often does not allow this freedom of choice, being different from what they are used to. Such conditions can make children feel frustrated, hostile, and depressed.<sup>5-6</sup>

The drawing could be a safe way for the child to demonstrate his concerns, fears and feelings, because he has not yet fully acquired the cognitive and verbal communication skills that would allow the expression of his emotional state.<sup>7-8</sup>

Considering that the hospitalized child can express their feelings about hospitalization through the drawing, thus recognizing their suffering for interventions to be proposed, it was proposed to assess the degree of anxiety presented by school children hospitalized in pediatric units using the

drawing and verify whether clinical factors and related to hospitalization could influence the degree of anxiety.

## METHODS

It is a cross-sectional study, descriptive of correlation carried through in the units of infant emergency room and pediatric internment of two hospitals of the city of São Paulo. All the pediatric units had toys with playful activities, allowed the presence of parents during the hospitalization and procedure and the preparation for procedures was done with verbal guidance to the children and guardians. Data were collected from May to October 2015 and October 2016 to June 2017 after the approval of the Ethics Committees of the institutions.

The criteria for inclusion of participants in the study were to be between six and 11 years old, to have been hospitalized for at least two hours, to have undergone some invasive procedure, to have accepted to participate in the research, to have the authorization of the parent or guardian, as proposed in the informed consent form, and not to have a confirmed medical diagnosis of neurological disorder and/or cognition. The criteria, two hours of hospitalization and having undergone some invasive procedure, were considered sufficient factors to cause anxiety in children.

The convenience sample, limited by the time of the study, was composed of 87 individuals. Children who were in isolation were excluded because they did not have access to the toy library. Two participants were refused to participate in the research, since one was in pain at the time of the approach and the other was not interested in drawing.

The evaluation of the degree of anxiety was done through the Child Drawing instrument: Manual Hospital (CD:H), which assesses the degree of anxiety of hospitalized school children.<sup>8-9</sup> Although the CD:H instrument has not yet been validated in Brazil, it was decided to use it, because written and verbal language are not involved in the application of the drawing, nor in its interpretation and consequently in the results.<sup>(8,9)</sup> However, the fact that the instrument was not valid in Brazil could limit the understanding of the instructions for its application, due to the absence of translation into Portuguese. Three researchers were trained in the use of the Child Drawing instrument: Hospital (CD:H)<sup>8-9</sup> and on how to approach children and their families to participate in the research. The data were collected by them in both institutions.

When the researchers detected possible participants, they introduced themselves to the child, explained the objective of the research to the parents, questioned whether they had already had access to the toy library at least two hours before the approach and if they would like to make a drawing.

The application of the CD:H followed the recommended steps and consisted in providing the child with A4 white paper and colored pencils of eight specific colors: red; purple; blue; green; yellow; orange; black and brown. The child was then asked: "Please, could you draw a person in the hospital?" The drawing was done individually and without the interference

of the researchers, who only manifested themselves when requested by the child. The child was also explained that the drawing would be collected soon after it was completed, but there was no time limit for the activity to be completed.<sup>8-9</sup>

The design produced was analyzed by the researchers and received points according to the classification recommended by CD:H, and it was possible to establish the score of each drawing, characterizing the level of anxiety at that moment. The classification recommended by the CD:H consists of the analysis of three parts of the drawing, and Part A makes the evaluation of 14 items, among them quality of the layout, size and proportions of the human figure drawn, colors used, location and size on the drawing sheet made and presence of hospital equipment. Part B evaluates eight items, among them omission, exaggeration, and distortion of human body parts. Part C consists of the general evaluation of the drawing and attribution of a score from one to 10 according to the child's ability to face the situation experienced.<sup>9</sup>

The score can vary from a minimum score of 15 to a maximum of 290 points. Ranking was done according to the following categories: very low level of anxiety ( $\leq 43$  score), low level of anxiety (44 to 83 score), medium level of anxiety (84 to 129 score), above average level of anxiety (130 to 167 score), and very high level of anxiety ( $\geq 168$  score).<sup>9</sup>

The research followed resolution 466, of December 12, 2012, which regulates research involving human beings, opinion number 1,114,843. School children were included in the study only after they accepted to participate freely and spontaneously and had the permission of parents or guardians. The child signed the Termo de Assentimento para Participar de Pesquisa Científica - TAPPC and the parent or guardian signed the Termo de Consentimento Livre e Esclarecido- TCLE.

Regarding the statistical analysis, the variables analyzed were those of characterization of children age and gender. Those related to hospitalization reason for hospitalization, hospital that was hospitalized, number of previous hospitalizations and time of current hospitalization. The response variable is the anxiety score and the classification of the degree of anxiety determined by the application of the CD:H instrument.

The descriptive analysis of the data was done by mean, median, standard deviation, absolute and relative frequencies. It was also verified if the variables of characterization of children and hospitalization influenced the response variables, from the descriptive data. The t-test, Kruskal-Wallis test and Spearman correlation test were applied, considering the 5% significance level.

## RESULTS

Regarding the characterization of the 87 participants, it was possible to observe that most of them were boys,

between six and nine years of age, hospitalized for diseases and that they had been hospitalized two or more times, had been hospitalized for at least five days and had a CD:H score classified as low, according to Table 1.

**Table 1** - Characteristics of children admitted to the pediatric unit. São Paulo, SP, Brazil, 2017

Variable	(n=87)
<b>Age group</b>	
<b>n(%)</b>	
6 to 8 years	45 (51,7)
9 to 11 years	42 (48,3)
<b>Age (years)</b>	
Average $\pm$ DP	8,5 $\pm$ 1,8
<b>Sex</b>	
<b>n(%)</b>	
Male	44 (50,6)
Female	43 (49,4)
<b>Reason for Hospitalization</b>	
<b>n(%)</b>	
Acute disease	53 (60,9)
Chronic illness	34 (39,1)
<b>Previous admissions (times)</b>	
Average $\pm$ DP	2,4 $\pm$ 4,0
<b>Hospitalization period (days)</b>	
Average $\pm$ DP	5,4 $\pm$ 11,6
<b>Score CD:H</b>	
Average $\pm$ DP	76,1 $\pm$ 23,0
<b>Score Classification CD:H</b>	
<b>n(%)</b>	
Very low	27 (31,0)
Low	38 (43,7)
Medium	21 (24,1)
Above average	1 (1,2)

Regarding the variables that could have influenced the CD:H anxiety score, it was found that the mean CD:H score was higher in children between 6 and 8 years old, male and were admitted for chronic reasons, and the association between sex and CD:H score was statistically significant, according to Table 2.

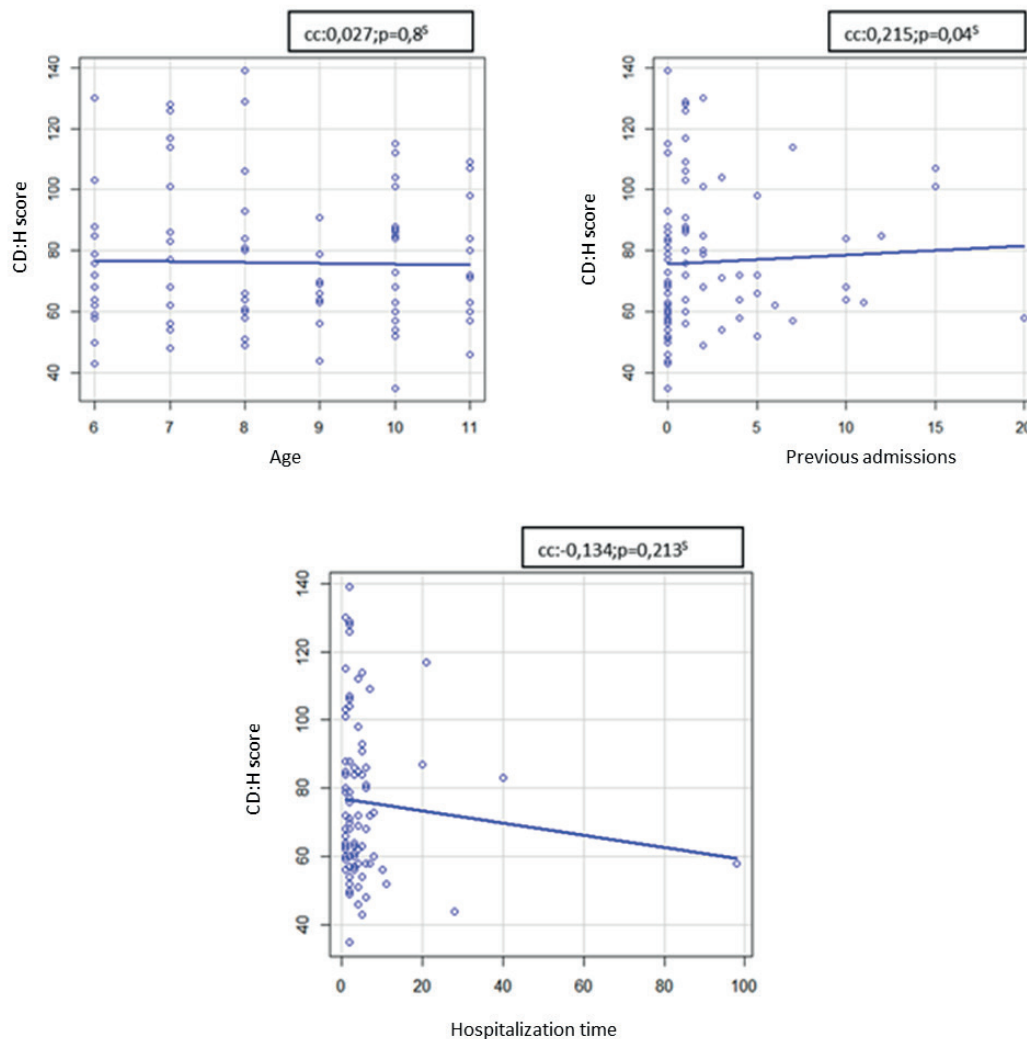
**Table 2** - Association between the child's characteristic and its hospitalization and the CD:H score. São Paulo, SP, Brazil, 2017

Variable	CD:H score Average±DP	p-value
<b>Age group</b>		<b>0,380T</b>
6 to 8 years	78,2±25,7	
9 to 11 years	73,8±19,6	
<b>Sex</b>		<b>0,0002KW</b>
Male	84,3±24,2	
Female	67,8±18,4	
<b>Reason for Hospitalization</b>		<b>0,716T</b>
Acute	75,4±24,1	
Chronicle	77,2±21,3	

Subtitles: T: Test t; KW: Kruskal-Wallis.

Figure 1 shows the correlation between the CD:H score and the child's age, number of previous hospitalizations and current length of stay, and it is possible to observe that there was no association between the variables and the CD:H score.

**Figure 1** - Correlation of CD:H score and age, previous admissions and length of stay. São Paulo, SP, Brazil, 2017



Subtitles: S: Sperman's correlation test



## DISCUSSION

In this study most of the hospitalized students had anxiety score classified as low, according to CD:H score. This may be explained by the fact that most children have been hospitalized for at least five days, better understanding the situation experienced, and may have developed effective coping strategies. Anxiety in school children is perceived when they fear procedures that may be submitted during hospitalization and by adopting the strategy of explaining to the child what will happen and what sensations they will feel, there is a reduction in the degree of anxiety<sup>1,10</sup>.

In research conducted to describe the feelings of hospitalized schoolchildren, they identified that despite seeing hospitalization in a negative way, they could understand the importance of hospitalization for their recovery and that the care and environments that favored this recovery, such as the use of games and toys, toy attendance, were seen as positive factors<sup>1,5,11</sup>.

The hospitalization units, where the study was conducted, had toys, which may have helped the children to face hospitalization with less suffering. Studies show that the use of intentional or unintentional playful interventions significantly reduces the anxiety experienced by hospitalized children.<sup>11-12</sup>

Another factor that may have minimized the anxiety of school children was the constant presence of parents. Research shows that the presence of parents during hospitalization promotes the child's safety and well being, reducing the anxiety and stress experienced during hospitalization.<sup>13-14</sup>

Regarding the factors that could have influenced the degree of anxiety of the hospitalized child, the present study found that children between six and eight years of age with chronic involvement had a mean CD:H score higher, although only the sex variable is statistically significant.

Children between six and 12 years old when hospitalized manifest feelings of inferiority by isolating themselves. In addition, they have a lower understanding of reality, being able to fantasize about what could be happening with distortion of their self-image, which would generate a higher degree of anxiety and stress related to the situation and unknown environments.<sup>8,15</sup>

In addition, research shows that children with chronic illnesses who are hospitalized frequently and undergo painful procedures manifest more intensely the signs such as irritability, fear and apathy in need of shelter and security.<sup>10,16-17</sup>

Thus, hospitalization is perceived by the child as an experience that will generate suffering, pain, fear and anxiety due to the various invasive procedures, which power submitted, necessary for their treatment. The proximity of this child's nurse and family will make the child perceive the situations of conflict and anxiety experienced. Therefore, it is of fundamental importance to know and understand better the reasons that generate anxiety during hospitalization through the use of instruments that can identify and minimize the impact of anxiety during this process for the child and his family, promoting better quality care.<sup>1,6,8,15</sup>

Although the results of this research show that school children have low level of anxiety, according to the evaluation

of the CD:H score, it is important that the nurse assess the degree of anxiety of patients, to identify critical cases and implement appropriate actions according to the level of anxiety presented. The use of the dramatic therapeutic toy aimed at expressing feelings could be one of the strategies to help the child and his family to better understand the experience of hospitalization experienced.

The limitations of the study consisted in the sample size and the use of the CD:H instrument not validated in Brazil. With a larger number of children evaluated, perhaps the higher anxiety score was identified and due to the fact that the instrument manual used to evaluate the score is not in Portuguese and adapted to the reality experienced by children hospitalized in Brazil, it may have compromised the evaluation and interpretation of the drawings analyzed.

## CONCLUSION

The children of the study presented low anxiety score, according to the instrument CD:H. The factors related to hospitalization did not influence the degree of anxiety. Still, it was identified that schoolchildren between six and eight years of age have a higher degree of anxiety compared to nine to 11 years of age. The results brought contributions that may change the care of the hospitalized school child, because the nurse, when identifying the degree of anxiety of hospitalized children, may use strategies that minimize the effects of hospitalization and the suffering of the child and his family. It is recommended that new studies are conducted to evaluate the anxiety during hospitalization and the effectiveness of interventions that reduce the stress experienced by the child during hospitalization.

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