MULTIDIMENSIONAL TOOLS: APPLICATION OF PAIN QUALITY CARDS IN CHILDREN[1]

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This pilot, descriptive and field exploratory study aimed to verify the representative of the quality of pain, applying the Pain Quality Cards to 50 children and teenagers hospitalized in the first half of 2004, after being approved by the Ethic Commission. Results have shown that there is no relationship between the age group and the number of positive answers. The identification of the cards was different to each group, 61,1% of the cards were identified for the pre-scholar, 77,8% for the scholar and 27,8 for the teenagers. The use of the instrument has revealed itself successful and able to evaluate, discriminate and measure the different dimensions of pain.

DESCRIPTORS: pain measurement; child; nursing

INSTRUMENTOS MULTIDIMENSIONALES: APLICACIÓN DE LAS TARJETAS DE LAS CUALIDADES DEL DOLOR EN NIÑOS

Estudio piloto, descriptivo y exploratorio de campo. El objetivo fue verificar la representatividad de las cualidades del dolor de niños y adolescentes, aplicando las Tarjetas de las Cualidades del Dolor a 50 niños y adolescentes en el primero semestre de 2004, después de obtener la autorización del comité de ética de la escuela de la enfermería. Los resultados apuntaron no haber correlación entre grupo de determinada edad y número de respuestas afirmativas. La identificación de las tarjetas fue distinta para cada grupo, es decir, 61,1% de las tarjetas fueron identificadas para el pre-escolar, 77,8% para el escolar y 27,8% para el adolescente. La utilización del instrumento mostró ser factible y capaz de evaluar, discriminar y mensurar las distintas dimensiones del dolor.

DESCRIPTORES: dimensión del dolor; niño; enfermería

INSTRUMENTOS MULTIDIMENSIONAIS: APLICAÇÃO DOS CARTÕES DAS QUALIDADES DA DOR EM CRIANÇAS

Estudo piloto, descritivo e exploratório de campo. O objetivo foi verificar a representatividade das qualidades da dor de crianças e adolescentes, aplicando os Cartões das Qualidades da Dor a 50 crianças e adolescentes no primeiro semestre de 2004, após obter a aprovação do Comitê de Ética da Escola de Enfermagem, USP. Os resultados apontaram não haver correlação entre faixa etária e número de respostas afirmativas. A identificação dos cartões foi diferente para cada grupo, ou seja, 61,1% dos cartões foram identificados para o pré-escolar, 77,8% para o escolar e 27,8% para o adolescente. A utilização do instrumento mostrou ser factível e capaz de avaliar, discriminar e mensurar as diferentes dimensões da dor.

DESCRITORES: medição da dor; criança; enfermagem

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INTRODUCTION

Pain sensations are feared by people of all ages, mainly by children. However, there is a strong popular belief that the latter do not feel pain. Although without any scientific foundations, many health professionals still maintain this belief.

Various reasons explain why pain in children does not receive the same attention as adult pain, including health professionals' difficulty to measure infant pain, either because they do not ask if they are feeling pain or because they do not know that younger children experience greater communication difficulties.

Myths occupy a significant place among arguments for the insufficient treatment and identification of pain, highlighting opioids as causes of physical dependence, tolerance, psychological dependence and respiratory depression. Moreover, professionals' limited knowledge and training about pain, disinformation and confusion among concepts of tolerance, physical and psychological dependence and respiratory depression, which impede effective communication about this subject, result in the inadequate and imprecise assessment and handling of infant pain[1].

Until the 1970's, the belief was that children were incapable of quantifying abstract phenomena like pain intensity. Study results have demonstrated that they are capable of indicating the levels of their suffering, provided that adults give them an adequate instrument, such as a scale, diagram or drawing[1].

There are various pain assessment instruments. Unidimensional tools only dimension intensity, whereas multidimensional ones assess qualities and different dimensions[2].

Tools like the visual analogue scale, numerical scale, cup scale and color scale, assess children's pain intensity and are related to their development level. To understand them, children need notions of arithmetic, besides color discrimination skills[3].

The face scale also assesses pain intensity, is constituted by six faces and seems to be more adequate for pre-school children who have learned neither to read nor write, nor any arithmetic knowledge[3].

In our context, we highlight a tool developed for pain intensity assessment in school-age children. This face scale consists of characters designed by the renowned cartoonist Maurício de Souza and well-known to Brazilian children[4]. Another national study applied this scale to hospitalized children with pain complaints[1].

Pain assessment is one of the most challenging problems health care providers are faced with. We believe that pain assessment is not only aimed at determining intensity, as shown by the above scales.

Literature emphasizes the need for research about pain quality, duration and influence in the psycho-affective sphere, supporting diagnosis, therapy choice and efficacy evaluation[5].

The use of pain assessment tools guarantees the evaluation of what the child is feeling, and not what the professional believes (s)he is feeling. For the sake of better pain comprehension, the processes the child experiences, both the physical and mental development stages need to be taken into consideration.

Lack of knowledge of adequate instruments, in combination with children's difficulties to express their pain, can be considered one of the obstacles nurses face in assessing child pain[6].

Nurses are in a privileged position to assess pain in children, and are particularly able to influence pain control, provided that they have autonomy to assess and prescribe medication if necessary. This opposition should also be used to establish links between infant pain research and hospital practice, in the attempt to decrease or mitigate suffering, learning to assess children with pain through a variety of approaches.

An existing gap in child pain quality assessment still remains, due to the absence of adequate tools for children's cognitive development level.

Therefore, pain assessment instruments need to be tested which not only assess, but also distinguish and measure different dimensions of children's pain experiences.

This study, which used an assessment tool to estimated behavioral and perceptual pain dimensions[7], is justified by its potential contribution to a more complete child pain evaluation.

Thus, this study aimed to verify the representativeness of pain qualities in hospitalized children and adolescents.

METHODOLOGY

We carried out a pilot, descriptive and exploratory field study. The population consisted of

pre-school and school-age children and adolescents, between three and 16 years of age. The total number of participants amounted to 50 hospitalized children with pain complaints, in the first semester of 2004.

The following selection criteria were adopted: pre-school, school or adolescent age; presenting pain complaints at the moment the cards were applied or being a child with chronic pain, presenting pain complaints or not at the moment the tool was applied; besides the ability to communicate and verbalize or indicate one's needs.

First, the research project was approved by the Ethics Committee for Research Project Analysis at the University of São Paulo College of Nursing. After obtaining approval, a grantee student collected data at the pediatric hospitalization unit of a public hospital in the city of São Paulo.

Before the start of data collection, the children and adolescents received information about the study goal. They received the guarantee that their identities would be preserved and that, in case of any sign of pain or discomfort, the interview would be immediately interrupted, with the possibility to restart or stop collaborating at any time, without any effect on hospital care.

The interviewees were stimulated to talk about each of the cards, starting from two motivating questions: Is Cebolinha in pain? and Tell me what his pain is like and what he is feeling.

The cards represented by the 18 pain quality descriptors[7] to assess whether they attributed similar meanings to the pain descriptor and to the illustration. Next, participants were asked to indicate the cards that best represented their pain.

The results were organized in three figures and a table, with percentages and absolute figures. In response to statistical advice, the necessary statistical tests[8] were applied to the card results, in order to summarize information about the card scores.

RESULTS

The study results are presented below, considering the population's identification and distribution according to the correlation between the cards and the pain descriptors.

The research subjects were 50 children, 24 (48%) boys and 26 (52%) girls. Thirteen (26%) subjects were in the pre-school group, 20 (40%) in school age and 17 (34%) in the adolescent group.

Among the boys, seven (30%) belonged to the pre-school group, 11 (45%) to the school-age group and six (25%) to the adolescent group. Among the girls, six (25%) were in the pre-school group, nine (35%) in the school-age group and 11 (40%) in the adolescent group, as shown in Figure 1.

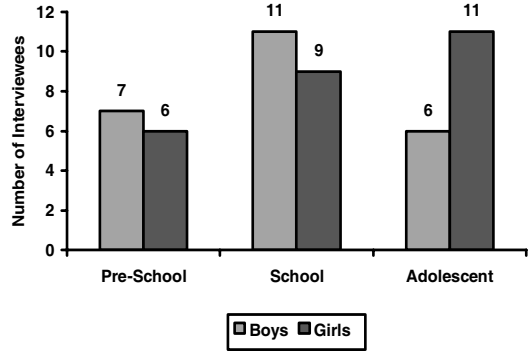


Figure 1 - Gender and age distribution of interviewees. São Paulo, 2004

The results were organized in frequencies of similarity and non-similarity between the children's answers and each card's actual meaning. Moreover, they were separated per group (pre-school, school and adolescent) and analyzed by means of a binomial test for small samples. In this type of test, the proportion between two levels of a factor is analyzed in one sample. The binomial distribution indicates a relation between the size of sample N and the number of cases X of the analyzed factor, the respective probability value that can be associated with the predetermined significance level $p < 0.01$. The general results of this type of analysis are described below.

Each group positively identified a different number of cards (Figure 2). The age range is not correlated with the number of affirmative answers. The Chi-Square test for the proportion of correctly identified cards per group indicates that groups and answers are mutually independent (observed chi = 9.45, critical chi = 5.991, degrees of freedom = 2).

As to the number of statistically correct answered per group for the total of 18 cards, in the pre-school group, five (28%) cards were recognized and 13 (73%) were not. In the school group, 14 (78%) cards were recognized, whereas only four (22%) were not. In the adolescent group, 11 (62%) cards were recognized and seven (38%) were not, as shown in Figure 2.

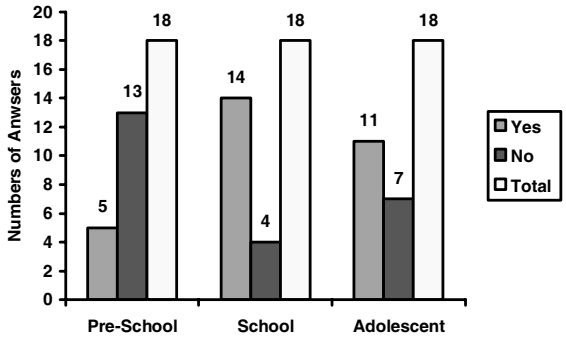
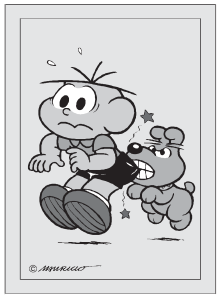


Figure 2 - Contingency of positive and negative answers about the identification of the study cards. São Paulo, 2004

Each group identified the cards differently (Table 1). For the pre-school group, the binomial test indicated that 61.1% of the cards were identified correctly, against 77.8% for the school group and 27.8% for the adolescent group.

The following cards were correctly identified by all groups (squeeze and bite):



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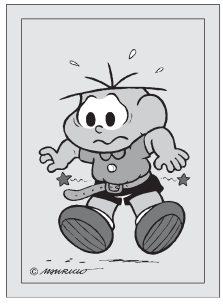


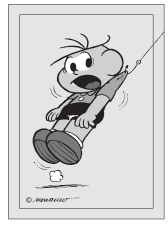
Squeeze

A majority of cards was identified by two groups, i.e. those representing (prick, terrifying, tormented, tiresome, painful, strong, nauseated, scattered, itching, throbbing and burning). Only two cards (maddening and jerking) were identified by one group; these were not identified by the pre-school and school group and by the pre-school and adolescent group, respectively.

None of the groups correctly identified the cards representing displeased, cold and hook-like:

Displeased

Cold



Hook-like

The study results presented the ability of children aged three or older to identify the location of their pain, as well as to use words that describe their pain[9].

To assess pain in small children, such as pre-school children for example, special attention should be given to the way they perceive the painful experience, as children in this age range perceive pain as a physical experience and live with it in an egocentric way[9].

Table 1 - Card identification and recognition in each study group. São Paulo, 2004

Pain Descriptor Cards	Pre-school	School	Adolescent
Displeased	No	No	No
Prick	No	Yes	Yes
Terrifying	No	Yes	Yes
Tormented	No	Yes	Yes
Tiresome	No	Yes	Yes
Painful	Yes	Yes	No
Strong	No	Yes	Yes
Maddening	No	No	Yes
Squeeze	Yes	Yes	Yes
Nauseated	No	Yes	Yes
Scattered	No	Yes	Yes
Hook-like	No	No	No
Itching	Yes	Yes	No
Cold	No	No	No
Throbbing	Yes	Yes	No
Bite	Yes	Yes	Yes
Burning	No	Yes	Yes
Jerking	No	Yes	No

The figure below displays each group's recognition of the cards according to the sensorial, affective, evaluative and miscellaneous components. Pre-school children identified four cards with sensorial components (painful, itching, bite and throbbing), school children recognized seven (jerking, painful, itching, throbbing, prick, burning and bite) and adolescents identified three (prick, burning and bite).

In the affective component, pre-school children did not recognize any card, school-age children identified four (terrifying, tormenting, tiresome and nauseated) and adolescents five (terrifying, maddening, tormenting, tiresome and nauseated). Within the evaluative component, pre-school children did not recognize any card either, and school-age children and adolescents identified only one (strong pain). In the miscellaneous component, pre-school children recognized one (squeeze) and school-age and adolescents two cards (scattered and squeeze).

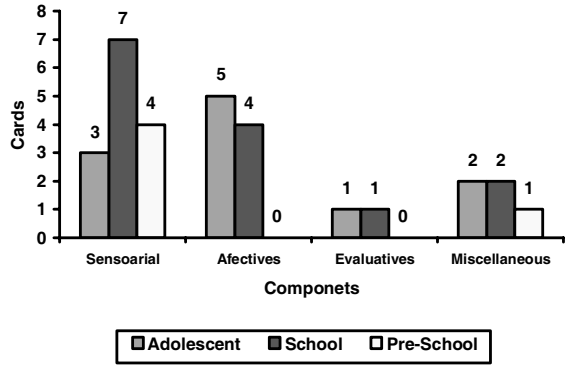


Figure 3 - Card recognition according to components. São Paulo, 2004

We compared our results with another pain descriptor study (sensorial-distinguishing, motivational-affective and cognitive-evaluative). Six answers present cognitive-evaluative contents, indicated by words that determine a pain value or degree (quite, little, no, much) [1], in according with the other study.

The sensorial-distinguishing classification is presented as a complement of an answer, in which the child uses the word hot to refer to a thermal sensation[1]. The motivational-affective classification is not considered in the research answers[1], but appears in the results of the other study.

DISCUSSION

The study results showed that our study objective was achieved. In other words, we managed to verify the representativeness of pain qualities in hospitalized pre-school and school children and adolescents with pain complaints or in chronic pain, through the application of the Pain Quality Cards[7].

Figure 2 displayed how many statistically right answers were given by each group, in a total of 18 cards. The pre-school group recognized five (28%) cards and did not identify 13 (73%) cards. In the school-age group, 14 (78%) cards were recognized and four (22%) were not. In the adolescent group, 11 (62%) cards were recognized, whereas seven (38%) were not.

The results showed no correlation between age range and the number of affirmative answers. The pre-school group identified 61.1% of the cards, against 77.8% for the school-age group and 27.8% for the adolescent group. Two cards (maddening and jerking) were identified by one single group. None of the groups managed to correctly identify three cards (displeased, cold and hook-like).

This study contributes by presenting the successful application of the Pain Quality Cards[7], because it considers more components of pain dimensions, helping professionals to determine and assess pain treatment, and also by showing the need to use such a tool, confirmed by the limitations of the instruments presented at the start of this article, which only assess child pain intensity.

Nurses need to understand the characteristics of child development and behavior to be able to assess and measure pain in children. The study authors alert about the inexistence of an adequate instrument for all children[11].

Figure 3 shows how each group recognized the cards according to the sensorial, affective, evaluative and miscellaneous components per group. Pre-school children identified four cards (painful, itching, bite and throbbing), school children recognized seven (jerking, painful, itching, throbbing, prick, burning and bite) and adolescents identified three (prick, burning and bite).

In the affective component, as shown by Figure 3, pre-school children did not recognize any card, school-age children recognized four (terrifying, tormenting, tiresome and nauseated) and adolescents identified five (terrifying, maddening, tormenting, tiresome and nauseated). With respect to the evaluative component, the pre-school children did not recognize any card either, while school-age children and adolescents identified only one (strong pain). In the miscellaneous component, pre-school children recognized one (squeeze) and school-age and adolescents two (scattered and squeeze).

Study results show that children aged five or six identified sensorial-distinguishing words more frequently than motivational-affective or cognitive-evaluative words[12].

Another study established the use of 17 sensorial-distinguishing and one cognitive-evaluative word for pain description by children between nine and 15 years old[13].

Analytic paradigms are under construction, presenting some considerations by the author, who exposes arguments resulting from human intelligence

research, indicating that it are experiences and not cognitive structures that lead a person to more elaborate levels of thinking[14].

The study results demonstrated that all children in this study used at least one characteristic method of pain relief, which is distraction, besides receiving the nurses' help for self-care and their parents' presence[15].

Children between six and 12 years old clearly defined the word pain as physical or moral suffering, as sorrow. The children managed to link pain with the fear of getting hurt or of invasive exams, confirming the hypothesis that they are capable of expressing themselves about the pain, by means of adequate instruments[16].

In hospitals, there is an urgent need for greater control of acute pain in children, using a systemized assessment system and analgesia[17].

In view of inherent limitations of child development, new studies are needed to identify resources that can help children from pre-school to adolescent age to present information about their pain.

CONCLUSION

The results of this study reveal that:

- each group identified the cards differently;
- only two cards (Squeeze and Bite) were correctly identified by all groups;
- two cards (Maddening and Jerking) were identified by only one group;
- three cards (Displeased, Cold and Hook-like) were not identified correctly by any of the groups.

The use of the Pain Quality Card tool[7] is viable. The tool can not only assess, but also distinguish and measure the different dimensions of the pain experience in children and adolescents. Its use should be encouraged and accessible to health professionals, with a view to the qualitative evolution of care delivery to children and adolescents in pain. This requires the insertion of the pain theme in the curricula of all medical, nursing and paramedical schools.

This study is limited by the size of the population. Therefore, new studies with more participants are needed, with a view to broadening knowledge about the theme.

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