

# PEDIATRIC NURSES' PERCEPTION OF PAIN EXPERIENCED BY CHILDREN AND ADULTS\*

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Pain is a frequent experience during childhood but our understanding of the experience of pain in children is extremely limited (Eland & Anderson, 1977; Jeans, 1983). There is evidence that children are, in comparison to adults, undermedicated for post operative pain. Eland and Anderson (1977) compared 25 children between the ages of 5 and 8 years with 18 adults who had undergone the same operation. The 25 children received a total of 24 doses of analgesics, of which 11 doses were narcotics. The 18 adults received 671 doses of analgesics of which 372 were narcotic analgesics. Similarly, Beyer, DeGood, Ashley and Russell (1983) found that 50 children (age 1 day to 14 years) who were undergoing open heart surgery were prescribed, and received, far fewer potent analgesics than adults who were undergoing similar surgery.

The reasons for the discrepancy between the amount of medication given to children and the amount of medication given to adults following surgery are not at all clear. Among the reasons that have been suggested is that adults, and nurses in particular, do not perceive the pain experienced by children to be as serious as the pain experienced by adults.

Although in previous studies there has been no positive evidence that nurses regard the pain experienced by children as less serious than the pain experienced by adults, this myth has been widely accepted.

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Few studies have attempted to measure how people perceive the pain experienced by others. Davitz and Davitz (1981) in a series of studies, examined nurses' inferences of patients' pain and psychological distress by means of a series of vignettes, portraying patients of different ages and with different types of problems. Nurses were asked to rate how much pain and how much psychological distress they thought the patients would feel in each situation. The findings of systematic differences across diseases and groups of nurses lends credibility to the vignette methodology.

The age and sex of the patients in the vignettes was not systematically varied and consequently it was not clear if there was any difference in nurses' inferences of pain because of the age or sex of the patients.

Petrovich (1957) describes a test of pain perception that uses a series of pictures to elicit estimates of how much pain respondents think the person in the picture is feeling. Since all pictures depict an adult male no differential estimates of perception of pain experienced by children or adults is possible using this test.

The purpose of this study was to investigate nurses' perceptions of the pain experienced by males and females in two age groups: children aged 9-12 years and adults aged 30-45 years. Pain situations were presented in vignettes and the nurses' perceptions of the pain was measured from two perspectives: 1) a judgement of what action the person in pain should take and 2) a rating of the severity of the pain experienced.

## Method

### *Subjects*

Graduate staff nurses working at a 300 bed pediatric teaching hospital were contacted by a nursing director who asked if they wished to participate in a study investigating nurses' responses to pain. The true nature of the study was not revealed to the subjects until after completion of the study. One hundred and seventeen nurses (115 females and 2 males) completed and returned the vignette questionnaire and a brief demographic face sheet on their own time. Responses were anonymous. The average age of respondents was 34.4 years (range 22-54 years). Thirty (25.6%) had graduated from community college programs; 66 (56.4%) had graduated from Hospital programs and 21 (17.9%) had completed University nursing programs.

*Instrument*

Four sets of sixteen vignettes describing commonly experienced pain situations were developed. Each situation described pain for which no serious medical sequelae would be expected. Table 1 contains examples of the vignettes. Each set had four vignettes in which the character was an adult male (30-45 years), and four in which the character was an adult female (30-45 years). Similarly, four vignettes in each set featured a male child (9-12 years) and four a female child (9-12 years). The order of vignettes was randomized in each set. Each of the sixteen vignettes appeared in each set and each vignette was equally represented in all four age-sex combinations.<sup>(1)</sup>

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(1)Complete copies of the vignettes are available from the senior author.

Table 1  
Examples of Vignettes Depicting Pain

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As she was bicycling back from the park, Patricia age 36 lost her balance when her front wheel hit a stone. She fell on the pavement scraping her legs and arms badly.
Kevin, age 43 was building a doghouse. Little splinters were left in his arm and hand from the rough board he was carrying. When the splinters were removed, it left his arm red and sore.
While moving to her new home, Cathy, age 9, strained her back lifting a box. The next day her back hurt enough to make her change her plans to go shopping.
While spending the day on the family boat, 9 year old Billy got a bad sunburn. His burn is very red, hot to touch, and there are tiny white water blisters on his arm and nose.

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Each subject in the study was given one set of sixteen vignettes and asked to answer, "What should this person do to relieve the pain he/she is experiencing?". The subjects were also assured that the person in the vignettes did not have any serious medical problem. Each response was coded using a Behavior Response Code (Table 2) in which possible behavioral responses were rated for their seriousness. The values assigned to each of the behavioral responses were determined by the rankings of the items in the Code assigned by three independent health professionals (agreement was 100%). In order to assess inter-rater reliability of this coding, twenty of the subjects'

questionnaires were independently recoded. A rate of 88% agreement was registered. If more than one response was given by a subject, only the most serious response was coded.

Table 2

Behavior Response Code

<i>Value</i>	<i>Description</i>
1	The person in pain should help himself without medicine, for example, try not to think about it or do something to keep their mind off the pain.
2	The person in pain should use a home remedy like drinking herbal tea or using a hot water bottle or ice pack.
3	The person in pain should seek advice or assistance from a friend or family member.
4.5	The person in pain should take a non-prescription pain reliever.
4.5	The person in pain should take a non-prescription medication that relieves the symptom but is not an analgesic.
6	A doctor, clinic or hospital should be consulted by phone.
7	A doctor, clinic or hospital should be visited, or prescription medication should be administered.

Subjects were also asked to rate the severity of pain experienced in each of the sixteen vignettes, using Davitz and Davitz's seven point scale.

### Results

The scores on the Behavioral Response Code and the pain severity rating were initially analysed to determine any differences among subjects that were attributable to the age, sex or education of the respondent nurses. No differences were found, and consequently, the data from all groups of nurses were collapsed.

The scores on the Behavior Response Code and the pain rating were calculated for each of the four types of character in the vignettes: adult male, adult female, male child, and female child (Tables 3 and 4). Analysis of variance was applied to determine if the age or sex of the vignette character was of significance. Analyses yielded no significant

(alpha = .05) differences in the perception of pain by nurses for any of the character types as measured by the Behavior Response Code and the pain severity rating.

The assessment of the amount of pain experienced by the vignette characters was closely related to what was suggested the vignette character do. The Pearson correlation of the scores on the severity scale and the Behavior Response Code was  $r = 0.78$  ( $p < .001$ ). This provides evidence for the validity of the vignette format in that nurses suggested more radical treatment for pain that was more severe.

Table 3

Behavior Response Scale Rating by Nurses of Vignettes

Character in vignette	Mean rating	Standard deviation	N
Male child	3.72	0.99	117
Adult male	3.83	1.21	117
Female child	3.69	1.13	117
Adult female	3.73	1.14	117

Table 4

Pain Rating by Nurses of Vignettes

Character in vignette	Mean rating	Standard deviation	N
Male child	3.89	0.66	110
Adult male	3.87	0.70	110
Female child	3.83	0.72	110
Adult female	3.84	0.79	110

### Discussion

In this vignette study, pediatric nurses regarded pain arising from everyday activities, experienced by 9-12 year old children to be as serious as similar pain experienced by adults. The nurses perceived the pain of children as severe as adult pain and they suggested similar classes of action to alleviate the pain. Similarly no differences were apparent in the perceived pain of males and females.

This finding suggests there is no underlying overall prejudice that would affect nurses' perception of pain in children. Such a prejudice would be apparent in common everyday pain as well as in post-operative situations. It is not possible to determine whether or not nurses would react differently to children and adults portrayed as being hospital patients, or if they would react differently to younger children. As well, the limitations of all analogue studies apply to this study. Real life behavior may not be identical to responses on a questionnaire.

Explanations for differential use of analgesics by children and adults in post operative pain must be attributed to factors other than a global prejudice on the part of nurses to diminish pain experienced by children. These factors might include the children's inability or unwillingness to communicate their pain; the lack of adequate methods to measure pain, especially in young children; or factors specific to the medical situation such as the health professional's fear that children may experience negative side effects from potent analgesics, or other specifics of post surgical pain.

## REFERENCES

- Beyer, J. E., De Good, D. E., Ashley, L. C., & Russell, G. A. (1983). Patterns of post operative analgesic use with adults and children following cardiac surgery. *Pain*, 17(1), 71-81.
- Davitz, J. R. & Davitz, L. L. (1981). *Inferences of patients' pain and psychological distress: Studies of Nursing Behaviors*. New York: Springer.
- Eland, J. M. & Anderson, J. E. (1977). The experience of pain in children. In A. K. Jacox (Ed.) *Pain: A source Book for Nurses and Other Health Professionals*.
- Jeans, M. E. (1983). Pain in children — A neglected area. In P. Firestone, P. McGrath, & W. Feldman (Eds.) *Advances in Behavioral Medicine for Children and Adolescents*. Hillsdale, NJ: Lawrence Erlbaum.
- Petrovich, D. V. (1957). The pain apperception test: Preliminary report. *The Journal of Psychology*, 44, 339-346.



## RÉSUMÉ

### **Les douleurs ressenties par les enfants et par les adultes telles que les perçoivent les infirmières pédiatriques**

Il existe des preuves à l'effet que les enfants ne reçoivent pas suffisamment de médicaments pour soulager leur douleur. Le phénomène pourrait s'expliquer notamment par le fait que les infirmières accordent moins d'importance à la douleur chez l'enfant qu'à une douleur comparable chez l'adulte. On a effectué une étude analogue dans le cadre de laquelle on a demandé aux infirmières de lire seize vignettes décrivant des personnes souffrantes; on leur a ensuite demandé de proposer des moyens de soulager la douleur de chaque personne et d'évaluer l'insensibilité de cette souffrance chez chacune d'elles. L'âge (9-12 ans ou 30-45 ans) et le sexe des caractères des vignettes variaient systématiquement. Les résultats ont révélé que les infirmières de notre échantillon trouvaient que les douleurs de l'enfant justifiaient un traitement similaire et étaient tout aussi pénibles que celles que présentaient les adultes. Bien que cette étude présente des limites importantes, elle offre cependant une première indication du fait que la manière dont les infirmières perçoivent la douleur d'une personne ne serait pas nécessairement influencée par l'âge ni par le sexe du malade.