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Pain Characteristics of Turkish Schoolchildren

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ABSTRACT:
Pain characteristics of Turkish schoolchildren

Objective: To assess characteristics of pain and gender differences and the impact of pain on daily living activities in Turkish schoolchildren who were admitted to health office with acute pain.
Methods: This study was designed descriptive and study population included 467 (302 girls, 165 boys) schoolchildren in a public elementary school in Istanbul, Turkey. Data were collected using the Pain Assessment Form and Numerical Rating Scale by interviewing between September of 2007-the June of 2008. The Pain Assessment Form included questions regarding the localization, intensity, quality of the pain, pain related symptoms, the effects of pain on the daily living activities and socio-demographic questions.
Results: Of the 1200 schoolchildren, 467 (39%) had admissions with pain to health office. Pain frequency in girls was significantly higher than that in boys in grade 4, 6 and total. The abdomen and head were most commonly cited as locations of pain. The mean pain intensity was 5.8(±2.2). School children reported pain affected their concentration, social relations, physical activities and their sleep in a negative way.
Conclusion: Our study provides a foundation for future studies to examine the incidence, characteristics, etiology and impact of pain in schoolchildren leading to the development of pain management programs at school.
Key words: Pain, schoolchildren, numerical rating scale

ÖZET:
Türk okul çocuklarında ağrı özellikleri

Amaç: Bu çalışmanın amacı akut ağrı şikayeti ile sağlık ofisine başvuran Türk okul çocuklarında ağrının özelliklerini, cinsiyet göre farkını ve günlük yaşam aktiviteleri üzerine etkisini değerlendirmektir.
Yöntem: Bu çalışma İstanbul'daki bir devlet ilköğretim okulunda 467 (302 kız, 165 erkek) okul çocuğu üzerinde tanımlayıcı olarak yapılmıştır. Veriler Eylül 2007- Haziran 2008 tarihleri arasında Ağrı Değerlendirme Formu ve Sayısal Ağrı Ölçeği ile toplanmıştır. Ağrı Değerlendirme Formu ağrının yeri, şiddeti, kalitesi, ağrıya eşlik eden semptomlar, ağrının günlük yaşam aktiviteleri üzerine etkisi ve sosyo-demografik özelliklere ilişkin sorulardan oluşturulmuştur.
Bulgular: 1200 okul çocuğundan 467'si (%39) ağrı şikâyeti ile sağlık ofisine başvurdu. Ağrı şikâyeti dördüncü, altıncı sınıflarda ve toplamda kızlarda erkeklere göre daha yüksek bulundu. Ağrı yeri olarak en çok baş ve karın bölgesi bildirildi. Ortalama ağrı şiddeti 5.8 (±2.2) bulundu. Okul çocukları ağrının konsantrasyonlarını, sosyal ilişkilerini, fiziksel aktivitelerini ve uykularını olumsuz yönde etkilediğini bildirdiler.
Sonuç: Çalışmamız okulda ağrı yönetimi programlarının geliştirilmesine yönelik olarak ağrının okul çocukları üzerine etkisini, etiyolojisini, özelliklerini ve insidansını incelemeyi amaçlayan ileriki çalışmalara bir temel oluşturabilir.
Anahtar sözcükler: Ağrı, okul çocuğu, sayısal ağrı ölçeği

INTRODUCTION

Pain is a universal and subjective human experience (1,2). According to the widely accepted definition by the International Association for the Study of Pain (IASP), pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (2,3).

Pain among children and adolescents has been identified as an important public health problem (4). Pain in schoolchildren may cause a number of negative consequences (sleep and eating problems, inability to communicate, school absence, and inability to concentrate for lesson etc.) to the child and the family. Especially, the school performance may drop due to impaired concentration ability and school absence because of pain (5).

A study of children and adolescents from Germany

demonstrated that of the 749 children and adolescents, 622 (83%) had experienced pain during the preceding 3 months. Headache (60.5%), abdominal pain (43.3%), limb pain (33.6%), and back pain (30.2%) were the most prevalent pain types among the respondents. In addition, children and adolescents with pain reported that their pain caused the following sequel. sleep problems (53.6%), inability to pursue hobbies (53.3%), eating problems (51.1%), school absence (48.8%), and inability to meet friends (46.7%) (6). In Turkey, pain studies in schoolchildren are limited with migraine and dysmenorrhea (7-9). There isn't any study about general pain problems in Turkish schoolchildren. In Turkey, in most of the public schools there aren't any school health professionals. School health services are provided by the local health centers and they are limited with immunization and health screening. Therefore, teachers and the school board often face with the students with pain in schools (3).

Assessment of pain characteristics is important as the first stage for pain management. The objective of the present study was to investigate (I) characteristics of pain (II) gender differences in complaints of pain, and (III) the impact of pain on daily living activities in Turkish schoolchildren who admitted to health office with complaint of an acute pain.

What is already known?

- The most of previous studies about pain assessment were done retrospectively.
- Pain complaints in schoolchildren are frequent.
- Pain affects children's daily activities.

What this paper adds?

- In this study, pain was assessed during the pain complaint in schoolchildren who admitted to health office with acute pain. It is more suited than retrospective pain assessment because children may not remember their pain's characteristics retrospectively.
- The abdomen and head were most commonly cited as locations of pain.
- Schoolchildren's pain was in a moderate level and significantly higher in girls than boys.
- Pain affects the children's attention in lessons, social relations, physical activities and sleeping habits in a negative way.

MATERIALS and METHODS

Subjects

This descriptive study population included 467 (302 girls, 165 boys) schoolchildren who admitted to health office with acute pain in a public elementary school in Istanbul, Turkey. 1200 schoolchildren (boy/girl ratio was 51/49) were attending in this elementary school. Exclusion criteria were as follows: Schoolchildren who had toothache and pain by injury. Subjects ranged in age from 7 to 14 years (from grade 1 to grade 8).

Instruments

Data were collected using the Pain Assessment Form (PAF) and Numerical Rating Scale (NRS). PAF developed for this study. PAF included questions regarding the localization, intensity and quality of the pain (burning, stabbing, squeezing, heavy aching, cramping and throbbing), pain related symptoms (nausea, vomiting, sweating, chill, dizziness, distributing, physical exercise, weakness, cough, crying and others) and socio-demographic questions (gender and grade). The schoolchildren also answered questions about the effects of these complaints on their daily life.

The pain location was registered on a map of the body where 18 body parts (head, eyes, ears, throat, legs-arms, hands-feet, wrist, ankle, knee, elbow, abdomen, inguinal, low back, tooth, thorax, back, neck and face) were marked and named.

PAF was pretested on 20 schoolchildren to determine whether the questions were appropriate and understood. There was no need for a change as PAF was found understandable and appropriate.

The schoolchildren rated the intensity of pain on a Numerical Rating Scale. NRS is accepted as a sensitive and reliable method of measuring pain intensity in literature. NRS includes 0 to 10, where 0 equals no pain and 10 equals the worst pain. The schoolchild is asked "What number would you give to your pain right now?" (10).

Procedure

The data were collected by interviewing schoolchildren who admitted to health office with acute pain in a public elementary school in Istanbul from September 2007 to June 2008. In this school, health services have been provided by the nursing instructors working in Community Health Nursing department and students of Marmara University Health Sciences Faculty.

Interviewers were researchers and three PhD students in Community Health Nursing. Students of doctorate were educated by researchers about pain assessment before data collection This study was approved by the local school board.

Analysis

Analyses were performed using the Statistical Package for the Social Science (SPSS) version 12.0. Descriptive statistics were computed for the demographic characteristics. The chi-square test was used to examine the associations of gender and grade on pain. Independent Samples t- Test was used to examine the associations' pain intensity and gender. Significance was set to $p< 0.05$ and confidence interval estimated at the 95% level.

RESULTS

Frequencies of Pain by Gender and Grades

Of the 1200 schoolchildren 467 (39%) had admission with pain to health office. The complaint of pain was significantly higher in girls than boys (girls 65%, boys 35%) in grade 4, 6 and total (Table 1).

Pain location

Table 2 indicates the most common areas of pain in our study population. The abdomen (38%), head (31%), extremities (15%) were most commonly cited as locations of pain. Girls had significantly more frequent abdominal pain than boys. Boys had significantly more frequent headache and extremity pain than girls (Table 2). There were no significant differences between grades for pain location.

Table 1: The Distribution of Pain between Grade and Gender

Grade	Girls n (%)	Boys n (%)	p-value	Total n (%)
1	14 (4.6%)	3 (1.8%)	Ns	17 (3.6%)
2	51(16.9%)	19 (11.5%)	Ns	70 (15%)
3	29 (9.6%)	20 (12.1%)	Ns	49 (10.5%)
4	64 (21.2%)	19 (11.5%)	0 .011	83 (17.8%)
5	62 (20.5%)	34 (20.6%)	Ns	96 (20.6%)
6	23 (7.6%)	32 (19.4%)	<0.000	55 (11.8%)
7	35 (11.6%)	27 (16.4%)	Ns	62 (13.3%)
8	24 (7.9%)	11 (6.7%)	Ns	35 (7.5%)
Total	302 (100%)	165 (100%)	<0.000	467 (100%)

n.s: not significant

Table 2: Location of Pain by Gender

Body Area	Girls n=302 %	Boys n=165 %	p-value	Total n=467 %	OR
Abdomen	46	25	<0.000	38	2.57
Head	26	40	0.003	31	1.85
Extremities (legs-arms, hands-feets, wrist, ankle, knee, elbow)	12	19	0.030	15	1.77
Back, low-back, neck	6	4	n.s	6	-
Thorax	1	5	-	2	-
Others (ears, throat, inguinal, face, eyes)	9	7	-	8	-

n.s: not significant

Pain intensity

The mean pain intensity for schoolchildren with pain was 5.8±2.2 on the NRS in this study; 16.5% of those suffering from pain rated their pain as 1 to 3 on the NRS, 47.6% rated their pain as 4 to 6 on the NRS, and 36.3% scored their pain as 7 to 10 on the NRS. There wasn't significantly difference between boys and girls (Table 3).

Table 3: The Mean of Pain Intensity by Gender.

Gender	N	Mean	Standart deviation
Boys	165	5.55	2.15
Girls	302	5.93	2.30
Total	467	5.80	2.20

t: 1.76; p = 0. 07

Pain Quality

Quality of pain in schoolchildren were defined as aching (27%), throbbing (17%), stabbing (16%), cramping (12%), squeezing (10%), burning (7%), and heavy (6%). Of the 467 schoolchildren with pain, 23 (5%) weren't defined quality of pain. Quality of pain wasn't statistically significant between boys and girls.

Pain Related Symptoms

Pain related symptoms were defined as weakness (20%), nausea (14%), dizziness (11%), chill (9%), sweating (4%), vomiting (3%).

The Impact of Pain on the Daily Life and Activities

Schoolchildren reported that their pain caused the following sequel: lesson attendance problems (53.3%), inability to communicate (36.2%), mobility /activity problems (15.8%), and sleep problems (6.2%). No significant differences were observed among girls and boys.

DISCUSSION

This study examined the localization, intensity and quality of pain, gender differences and the impact of pain on the daily life activities in Turkish schoolchildren who admitted to health office with acute pain. The results of this study showed that complaints of pain were high among schoolchildren and girls reported pain more frequently than boys. Similarly, girls reported heavier pain than boys, which was demonstrated in five studies of children and adolescents from Norvey, Sweden, Germany and Greece (6,11-14). But in a study which was done in Spain, there aren't any differences in the pain prevalence between boys and girls (15).

The abdomen and head were most commonly cited as locations of pain. The results of this study regarding location of pain are consistent with the previous studies (3,4,6,11,13). Girls more often reported abdominal pain than boys. This result is nearly the same with the results of Ostberg et al. (16). The reason of the abdominal pain that is mostly seen in girls may be due to menstrual reasons.

Headache is a frequent symptom among schoolchildren. In the study by Bugdayci et al. it was found that 50% of headache in schoolchildren was tension headache (17). Tension headache, which is the type of headache children most frequently experience, has been linked with psychosomatic problems, such as stress, problems in relations with schoolmates, and lack of sleep or exercise (18).

Abdominal pain and headache in schoolchildren may be somatization symptoms (19). Therefore school nurse should assess about somatization in schoolchildren with abdominal pain and headache.

In this study it is found that school children feel the pain in moderate level. This result is quite similar with the results of Roth –Isikeit et al. (4).

Descriptions of the pain may be helpful in determining its origin and implementing effective measures for pain control (1). In this study, schoolchildren mostly told the quality of their pain as aching, throbbing and cramping.

Schoolchildren with pain reported that the pain negatively affects attendance to lessons,, maintenance of social relations, physical activities and sleep. Roth-Isikeit et al. (4) reported that schoolchildren with pain reported that the pain caused sleep problems, inability to pursue hobbies, eating problems, school absence, and inability to meet friends.

CONCLUSIONS

As a result, in this study it is shown that the schoolchildren's pain is in a moderate level and girls have abdominal pain more frequently than boys;, and also pain affects their attention in lessons, social relations, physical

activities and their sleeping habits in a negative way.

Our study provides a foundation for future studies to examine the incidence, characteristics, etiology and impact of pain in schoolchildren leading to the development of pain management programs in school.

Strength and Limitation

The strength of our study is that pain was assessed during the pain complaint in schoolchildren who admitted to health office with acute pain. It is more suited than retrospective pain assessment because children may not remember their pain's characteristics retrospectively.

Limitation in this study was that questionnaire was applied to a small population of school children.

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