

Comparison between children and adolescents with and without chronic benign pain: consultation rate and pain characteristics

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SUMMARY

The aim of the study was to determine whether children with chronic benign pain are in contact with their general practitioner (GP) more frequently than those without chronic benign pain. A random sample of children and adolescents aged between 0 and 18 years of age was drawn from the records of ten general practices. According to their responses to a pain questionnaire, subjects were assigned to the chronic benign pain group ($n = 95$) if they had pain of more than three months' duration, or to the control group ($n = 105$) if they had pain of less than three months' duration or no pain at all. All the subjects had an average GP consultation rate of 2.6 contacts per year. No significant age and sex differences were found. Chronic benign pain in childhood and adolescence is not related to increased use of healthcare services, suggesting that somatisation does not play a major role in children with chronic benign pain.

Keywords: adolescents; paediatrics; pain.

Introduction

CHRONIC pain is a common complaint in childhood and adolescence. In a recent community survey, one-quarter of children aged between 0 and 18 years reported chronic pain lasting more than three months.¹ Many healthcare providers consider that chronic pain is related to extensive healthcare utilisation for physically unexplained pain, which they often associate with somatisation, although there are no data to support this.

The aim of this paper is to determine whether children and adolescents with chronic benign pain consult their general practitioners (GPs) more often than children and adolescents without chronic benign pain, and whether pain characteristics, such as localisation, severity, and persistence, affect the consultation rate.

Method

Study sample

In March 1998, a 25% random sample of children and adolescents aged between 0 and 18 years ($n = 1316$) was drawn from the records of ten GPs in the greater Rotterdam area.² Written informed consent to examine the medical records of the children and for participation in a longitudinal survey was obtained. After scrutinising the medical records, subjects with chronic pain of known organic aetiology; for example, owing to rheumatic arthritis and malignancies, were excluded. Subsequently, the group of children with chronic benign pain was invited to participate in a two-year follow-up study between May 1998 and May 2000.

Instruments and outcome measures

The subjects or their parents were sent a structured pain questionnaire. They were assigned to the group with chronic benign pain if the answer was affirmative to the question: 'Did you/your child experience pain in the previous three months?' and if they also indicated that the pain lasted longer than three months. The control group consisted of subjects who reported pain lasting less than three months or no pain at all. Additional questions concerned the localisation of pain, frequency and intensity of pain, age, sex, and ethnicity. Parent ratings were used for subjects aged between 0 and 11 years, and self-reporting was used for subjects aged between 12 and 18 years. This questionnaire has been described in detail by Perquin *et al.*¹

The group with chronic benign pain was followed yearly

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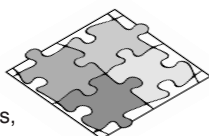
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HOW THIS FITS IN*What do we know?*

Somatisation in children and adolescents, particularly in the form of complaints of recurrent pain, is quite common and is related to increased use of healthcare services. Although this is not based on evidence, many healthcare providers consider chronic pain sufferers to be frequent users of healthcare services.

What does this paper add?

Chronic benign pain in childhood and adolescence is not related to increased use of healthcare services, suggesting that somatisation does not play a major role in chronic benign pain in children and adolescents.



for two successive years by means of a posted pain booklet, which consisted of questionnaires on background factors, healthcare use, and quality of life, with a three-week diary to record pain.^{3,4}

After the follow-up period, the GPs' medical records of all subjects were examined to assess the GP consultation rates. All contacts of the subjects with their GP, including home visits, consultations and telephone calls, were counted. The annual consultation rate over a three-year period was calculated, starting one year prior to the survey and including the two-year follow-up period. Additionally, the lifetime consultation rate was calculated by dividing the total number of contacts by the number of person years.

For both groups, the consultation rate, excluding contacts for chronic benign pain, was also calculated. Chronic benign pain was defined as pain of unknown organic aetiology lasting longer than three months, or pain entailing at least two previous contacts in one year.

Analysis

Student's *t*-tests were used to compare means. Linear regression analyses were carried out, with adjustment for age and sex to test the effect of chronic benign pain, and of pain severity and persistence, on the consultation rate. Differences in age-related trends between the groups were tested for interaction between age (as a continuous variable) and presence of chronic benign pain by linear regression analysis.

Severe chronic pain was defined as chronic benign pain with baseline intensities of more than 50 mm on the Visual Analogue Scale (VAS) occurring weekly, and persistent chronic pain as chronic benign pain persisting across the two-year follow-up period.

Results**Responders**

From the random sample of 1316 subjects, 123 subjects were excluded by the GPs because of moving away, language barriers, and various other circumstances (e.g. terminal illness in the family), leaving a study sample of 1193 subjects. A total of 819 (69%) questionnaires were completed. Chronic pain was reported by 205 (25%) responders, of whom 109 (53%) gave their consent for this study. Although

not specifically asked, 105 of the responders without chronic pain also gave their consent. Fourteen subjects in the chronic pain group were excluded because the pain was of organic aetiology (mainly recurrent upper respiratory tract infections). The average age of the 14 excluded children was significantly lower than of the 95 subjects with chronic benign pain ($P < 0.001$). The group with chronic benign pain ($n = 95$) comprised 41 boys and 54 girls. The average age for boys was 11.4 years (SD = 3.8) and for girls 11.1 years (SD = 4.5). The control group ($n = 105$) comprised 62 boys and 43 girls. The average age for boys was 8.6 years (SD = 4.8) and for girls 7.1 years (SD = 5.3).

Consultation rate

For both groups the average consultation rate in the three-year period was 2.6 contacts per year (SD = 2.2, median 2.0, range = 0–13.7).

Table 1 shows the average consultation rate of subjects with and without chronic benign pain, adjusted for age and sex, during the three-year study period. The group with chronic benign pain and the control group had an equal average consultation rate of 2.6 (SD = 1.9) contacts per year. No age or sex differences were found for the consultation rate. The lifetime consultation rates also showed no significant differences (data not shown).

Of the group with chronic benign pain, 48 (51%) subjects had contacts with their GP because of chronic benign pain, compared with 14 (13%) in the control group. The average number of these contacts was 2.3 (SD = 1.8) in the group with chronic benign pain and 1.5 (SD = 0.9) in the control group. When subjects in the control group with chronic benign pain contacts were excluded, there were still no significant differences found for the consultation rates between the two groups.

In the group with chronic benign pain, 26 subjects experienced severe chronic pain and 20 subjects experienced persistent chronic pain. For both subgroups the consultation rate was 2.5 contacts with their GP per year, which was not significantly different from the control group. Furthermore, no significant differences were found in the consultation rate for subjects with limb pain (34%), abdominal pain (31%), headache (28%), back pain (3%), and other types of pain (4%).

Discussion

These results show that the GP consultation rate was equal for both groups, and that the average number of GP contacts per year corresponds with the consultation rate of children and adolescents from the general Dutch population (2.9 contacts per year).⁵ When the contacts owing to chronic benign pain were included, the consultation rate remained equal for both groups, suggesting that GPs are not frequently consulted for chronic benign pain. Although about half of the chronic pain sufferers had contacted their GPs because of chronic benign pain, the relatively low number of contacts in the subjects with chronic benign pain supports this.

Although the consultation rate for both groups decreased with increasing age, the consultation rate for chronic benign pain subjects decreased more slowly (Table 1). Unfortunately, the small numbers in this study do not allow for testing for a difference in age-related trend. Longitudinal

Table 1. Annual GP consultation rates during a three-year period, including/excluding contacts for chronic benign pain, for subjects with chronic benign pain and controls by age and sex.

| | Chronic benign pain group ^a | | | Control group ^a | | |
|--------------|--|--|--|----------------------------|--|--|
| | <i>n</i> | Including chronic benign pain contacts | Excluding chronic benign pain contacts | <i>n</i> | Including chronic benign pain contacts | Excluding chronic benign pain contacts |
| | | Mean (SD) | Mean (SD) | | Mean (SD) | Mean (SD) |
| Total | 95 | 2.8 (2.0) | 2.6 (1.9) | 105 | 2.7 (2.5) | 2.6 (2.5) |
| Age category | | | | | | |
| 0–4 years | 8 | 3.1 (2.4) | 3.0 (2.4) | 32 | 3.6 (3.1) | 3.6 (3.1) |
| 5–11 years | 44 | 2.8 (2.0) | 2.7 (1.9) | 48 | 2.5 (2.3) | 2.5 (2.3) |
| 12–18 years | 43 | 2.7 (2.0) | 2.5 (1.9) | 25 | 1.7 (1.3) | 1.6 (1.3) |
| Sex | | | | | | |
| Male | 41 | 2.2 (1.7) | 2.1 (1.7) | 62 | 2.5 (2.5) | 2.5 (2.5) |
| Female | 54 | 3.2 (2.1) | 3.0 (2.1) | 43 | 2.9 (2.5) | 2.8 (2.5) |

^aThe distinction between the chronic benign pain group and the control group was made according to subjects' responses to the pain questionnaire. There are contacts for chronic benign pain in both groups, since chronic benign pain can emerge both before or after the inclusion of responders in the survey. Differences in consultation rates between the two groups, including or excluding contacts for chronic benign pain, were tested by linear regression analyses with adjustment for age and sex, and none were significant.

studies are needed to test the hypothesis that tomorrow's adult chronic pain sufferer has significantly more healthcare contacts.

These results indicate that somatisation does not play a more prominent role in children and adolescents with chronic benign pain than in those without chronic benign pain.

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References

1. Perquin CW, Hazebroek-Kampschreur AAJM, Hunfeld JAM, *et al.* Pain in children and adolescents: a common experience. *Pain* 2000; **87**: 51-58.
2. Middelkoop BJ, Bohnen AM, Duisterhout JS, *et al.* Rotterdam general practitioners report (ROHAPRO): a computerised network of general practices in Rotterdam, The Netherlands. Rotterdam's HuisArtsen Project. *J Epidemiol Community Health* 1995; **49**: 231-233.
3. Perquin CW, Hunfeld JA, Hazebroek-Kampschreur AA, *et al.* Insights in the use of healthcare services in chronic benign pain in childhood and adolescence. *Pain* 2001; **94**(2): 205-213.
4. Hunfeld JAM, Perquin CW, Duivenvoorden HJ, *et al.* Chronic pain and its impact on quality of life in adolescents and their families. *J Pediatr Psychol* 2001; **26**: 145-153.
5. Centraal Bureau voor de Statistiek. *Vademecum Gezondheidsstatistiek Nederland 1998*. 's Gravenhage: SDU, 1998.