

## Editorial

# The Epidemiology of Chronic Pain

Ricardo Ruiz-López, MD

Clínica del Dolor de Barcelona, Pau Alcover, 75-77, Barcelona 08017, Spain

There is increasing need of epidemiologic research to establish the prevalence of chronic pain and describe the risk of developing chronic pain behaviors that could lead to disabling syndromes. Different epidemiologic studies have been developed to investigate specific pain complaints, showing the characteristics of pain conditions in different population samples. However, few epidemiologic surveys study different kinds of pain conditions in the same set of subjects.

### Chronic Pain in a General Population

Crook and colleagues [1] in 1984 found, from a sample of 372 Canadian families, that 24% of the families had at least one member who suffered from persistent pain; 14% of subjects suffered from persistent pain, of whom 75% had required medical assistance in the last year; and 60% regularly took pain medication. Calculated prevalence rate for persistent pain in the surveyed population was near 11%.

The Nuprin Pain Report [2,3,4], an American survey of a random cross section of 1,254 adults over 18, reported prevalence rates for pain lasting more than 3 mos of 10% for joint pain, 9% for back pain and 5% for headache and muscle pain.

Andersen and coworkers [5] studied 3,196 randomly chosen adults living in Copenhagen and found a prevalence rate of 30% of persistent pain. Persistent pain was not defined.

Von Korff and colleagues [6] in 1988 studied a stratified random sample of adult enrollees of a large health maintenance organization in Seattle. The prevalence of pain in the prior 6 mos was 41% for back pain; 26% for headache; 17% for abdominal pain; 12% for chest pain; and 12% for facial pain. The investigators did not report the prevalence rate for the different pain conditions.

Brattberg and associates [7] surveyed 1,009 randomly chosen Swedish individuals; aged 18 to 84, and found a lifetime prevalence rate of 66% for pain or discomfort; 40% reported "obvious pain" lasting more than 6 mos. Pain problems of more than 6 mos' duration were reported far more

often than short-lasting problems, with 22% of the surveyed population reporting "continuous pain."

James [8] in a psychiatric epidemiology study carried out in Christchurch, New Zealand in 1986 on 1,498 adults in the general population aged 18 to 64, found a lifetime pain prevalence rate of 80% of the adult population.

A large nationwide survey on pain complaints conducted in Great Britain by Bowsher and coworkers [9] on 1,037 randomly chosen households showed a prevalence rate of 7% for pain lasting more than 3 mos. Their finding of a chronic pain prevalence of 70 per 1000 in the general population is lower than the 90 of 827 (11%) individuals "... identifying a persistent pain problem and experiencing pain in the last 2 weeks" reported by Crook and colleagues in a dormitory suburb of Toronto [1]. However, it is virtually identical to the proportion found in the respondents of this study. Within age groups, those under 24 yrs experience significantly less chronic pain than older age groups, while subjects over 55 yrs have considerably more chronic pain than those of lesser age.

A recent study by Stewart and coworkers [10] on migraine headache in the United States should complete update data on chronic pain in the general population. Of 20,468 subjects between 12 and 80 yrs of age responding, 17.6% of females and 5.7% of males had one or more migraines per year. Migraine prevalence varied by age, was highest in men and women aged 35 to 45 years, and was strongly associated with household income; prevalence in the lowest income group was more than 60% higher than in the two highest income groups. Attack frequency was inversely related to disability.

### Chronic Pain and Disability

The treatment and recovery of patients with disabling non-malignant chronic pain syndromes is a serious challenge to industrialized countries.

Almost every epidemiological study on chronic pain and disability has been carried out on the working population, due to the high prevalence of spinal disorders originating chronic pain as the first cause of economic compensation and disability.

In a study carried out in Quebec [11], Canada, on activity-related spinal disorders during 1981, it was found that total

costs of spinal injuries represented 28.5% of the cost of compensation for work injuries during that year. An important finding was that 7.4% of compensation claimed for spinal disorders caused a period out of work of more than 6 mos, giving rise to 75.6% of all compensation costs and 21.4% of the cost of compensation for all causes during 1981 in the Quebec region. These figures suggest that the impact of medical care in painful spinal disorders caused by work injury is not as important as disability, occupational rehabilitation and social problems.

Another study, carried out by Burry and associates [12] in New Zealand in 1988, showed that compensation for back injury, paid by the Accident Compensation Corporation, was the most frequent cause of compensation. While 41% of injured workers returned to work during the first 2 wks, 5.3% were out of work for more than 6 mos and received 50% of total compensation payments.

As is reflected in data obtained by Spengler [13] in the Boeing Study, a new therapeutic approach is needed, along with more medical-social care for the detection and early treatment of this growing medical problem. Bigos and co-workers [14] conducted a prospective study of 3,020 aircraft employees to identify risk factors for reporting acute back pain at work. They found that, other than a history of current or recent back problems, factors most predictive of subsequent reports in a multivariate model were work perceptions and certain psychosocial responses identified on the Minnesota Multiphasic Personality Inventory. These findings emphasize the importance of adopting a broader approach to the multifaceted problem of back complaints in industry and help explain why past prevention efforts focusing on purely physical factors have been unsuccessful.

### Chronic Pain in the Elderly

Although there has been increasing interest in epidemiological studies of pain problems during the past few years, very little attention has been paid to the epidemiology of pain syndromes in elderly populations.

In one of the very few studies on pain in the elderly, Brochet and colleagues [15] show us that, in a southwestern region of France, frequency of pain syndromes in elderly community residents is 68.26% for joint pain, and different pain syndromes are frequently associated. Only 25.6% of elderly subjects were pain free; and this is probably overestimated because the common complaints of chest and abdominal pains were not evaluated. The study shows that pain in this population is associated with a feeling of bad health, depressive symptoms, and a loss of autonomy. These results justify the development of appropriate health care strategies for elderly people.

### Chronic Pain in Children and Adolescents

Finally, full attention must be paid to the occurrence of pain in children and adolescents. Most epidemiological studies

investigating pediatric pain have addressed specific pain conditions [16], eg, pain from headache, recurrent abdominal pain, rather than provide a comprehensive analysis of pain problems in childhood and adolescence. An effort must be made in this epidemiological research [17] to provide a solid basis for implementing medical and social resources for the alleviation of pain conditions in children and adolescents.

The future challenge for epidemiologic pain studies is research on specific populations appropriate for establishment of preventive strategies [18]. This effort must be oriented to well-defined pain syndromes, consistently described and with some characteristics on severity and duration. Data should be obtained as to where preventive activities on different levels might be used to alleviate suffering and diminish the socioeconomic impact of this major public health problem.

### References

1. Crook J, Rideout E, Browne G: The prevalence of pain complaints in a general population. *Pain* 1984; 18:299-314
2. Sternbach RA: Pain and "hassles" in the United States: Findings of the Nuprin Pain Report. *Pain* 1986;27:69-80
3. Sternbach RA: Survey of pain in the United States: The Nuprin Pain Report. *Clin J Pain* 1986;2:49-53
4. *Nuprin Pain Report*. New York, Louis Harris and Associates, 1985
5. Andersen S, Worm-Petersen J: The prevalence of persistent pain in a Danish population. *Pain* 1987 (Suppl 4):S332
6. Von Korff M, Dworkin SF, Le Reseñe L et al: An epidemiologic comparison of pain complaints. *Pain* 1988;32:173-183
7. Brattberg G, Thorslund M, Wikman A: The prevalence of pain in a general population. The results of a postal survey in a county of Sweden. *Pain* 1989;37:215-222
8. James FR, Large RG, Bushnell JA et al: Epidemiology of pain in New Zealand. *Pain* 1991;44:279-283
9. Bowsler D, Rigge M, Sopp L: Prevalence of chronic pain in the British population: A telephone survey of 1,037 households. *The Pain Clinic* 1991;4:223-230
10. Stewart WF, Lipton RB, Celentano DD et al: Prevalence of migraine headache in the United States. *JAMA* 1992;267:64-69
11. Spitzer WO, Leblanc FE, Dupuis M: Scientific approach to the assessment and management of activity-related spinal disorders. *Spine* 1987; 12:S7
12. Burry HC, Gravis V: Compensated back injury in New Zealand. *NZ MedJ* 1988;8:542-544
13. Spengler DM, Bigos SS, Martin NF: Back injuries in industry. A retrospective study. *Spine* 1986;11:241
14. Bigos SJ, Battie MC, Spengler DM, et al: A prospective study of work perceptions and psychosocial factors affecting the report of back injury. *Spine* 1991;16:1-6
15. Brochet B, Michel P, Barberger-Gateau P et al: Pain in the elderly: An epidemiological study in south-western France. *The Pain Clinic* 1991; 5:73-79
16. Brattberg G: Back pain and headache in Swedish schoolchildren: A longitudinal study. *The Pain Clinic* 1993;6:157-162
17. Goodman JE, McGrath PJ: The epidemiology of pain in children and adolescent: A review. *ftifn* 1991;46:247-264
18. Crombie IK, Davies HTO, Macrae WA: The epidemiology of chronic pain: Time for new directions. *Pain* 1994;47:1-3