

The use of lumbosacral corsets prescribed for low back pain

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Introduction

Low back pain is a common complaint, often requiring sick leave, (Horal, 1969; Westrin, 1970; Helander, 1973) for which a lumbosacral corset is frequently prescribed. According to Perry (1970) only 14 out of 3410 American orthopaedic surgeons had never prescribed some kind of support for low back problems. The situation in Sweden is presumably very similar. In Sweden, with a population of 8·2 million inhabitants, as many as 61,000 corsets were supplied to patients because of low back pain in 1976. These corsets cost about 22 million Swedish crowns. It was therefore thought worthwhile to assess to what extent such corsets are really used.

Material and method

The archives of the orthopaedic workshop affiliated with the orthopaedic clinic of a central county hospital covering a district with 260,000 inhabitants was searched for patients who had their first corset prescribed in 1972. The staff of the clinic then consisted of five orthopaedic surgeons and of these three had more than ten years experience of orthopaedic surgery. Prescriptions for corsets made by other doctors than the abovementioned five were not accepted by the workshop. Of the cases collected from the archives 260 patients who had been fitted with their first corset were randomly selected. Their hospital records were collected and certain clinical data were noted in a special form. In the summer of 1976, i.e. 3·5-4·5 years after they had received their corset, the patients were interviewed by telephone according to a specially designed questionnaire. A total of 201 of the patients were successfully contacted all of whom confirmed that they had been fitted with a corset for the first time in 1972. The sample thus consisted of 201 patients. The first inter-

views were conducted by a doctor, but later by a secretary who had assisted at the first interviews and gained the necessary experience.

Results

In total 109 women and 92 men were interviewed. The sex distribution tallied well with the fact that 55 per cent of all corsets supplied by the County National Purchasing Centre were for women. This suggests that the sample was representative. It is clear from the age distribution (Table 1) that about two-thirds of the corsets were supplied to persons between the ages of 41 to 70 inclusive. There was no difference between the men and the women in this respect.

Table 1
Age distribution of patients when fitted with corset

Age	Men	Women	Total
-25	4	1	5
26-40	19	19	38
41-55	33	37	70
56-70	28	40	68
71+	8	12	20
	92	109	201

The diagnoses are given in Table 2. The term chronic lumbago is used to denote back pain radiating down the thigh(s), but not further than to the knee(s). Chronic lumbago-sciatica designates low back pain radiating down the thigh and below the knee(s). Acute lumbago-

Table 2
Diagnosis at time of prescription

Chronic lumbago	108
Chronic lumbago-sciatica	39
Acute lumbago-sciatica	26
Vertebral body fracture	11
Miscellaneous	17
	201

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sciatica is to be understood as low back pain of less than six months duration radiating to below the knee(s) in association with a positive Lasègue's sign and neurological deficit. Cases of acute herniation of the intervertebral disc should be found under this diagnosis. The group with vertebral fractures comprises both recent and old fractures and the miscellaneous group embraces, among other things, spondylitis, scoliosis, spondylolysis, spondylolisthesis, osteoporosis as well as six cases of acute lumbago. In the first three diagnostic groups based on clinical findings the roentgenologist's report contained no notes about any changes in the lumbar spine other than disc degeneration and/or spondylosis. Sometimes the roentgen examination revealed nothing remarkable.

The vast majority (90 per cent) of the patients were examined roentgenographically in association with the prescription for a corset and in none of them had the examination unexpectedly revealed infection or a malignant process. Examination of the hospital records of the remaining 10 per cent contained no notes about any infection or malignant process later discovered.

The border between chronic lumbago and chronic lumbago-sciatica is neither sharp nor natural. These two groups were therefore pooled and then constituted about three-quarters (73·1 per cent) of the total material.

Table 3 shows the age and sex distribution of the use of corsets by the patients 3·5 to 4·5 years after they had been supplied. Of the original 201 patients, 105 still wore a corset. In addition, 38 patients (19 men and 19 women) had worn a corset until they had become symptom-free. Two of these 38 had worn a corset for about

a week, 5 for one week to one month, 11 for one to three months, 12 for three months to one year and 2 for more than a year. Six patients reported "for some time" or "in the beginning".

In 143 (71 per cent) cases, then, it was known that the patients had made some use of their corset. That is almost three-quarters used it for some time after the prescription and 3·5 to 4·5 years later half of the original patients still used a corset. After this period 163 still had symptoms and 105 of them were still using a corset, i.e. 64·8 per cent or roughly two-thirds.

In the lower age classes the women tended to use a corset less often than the men, but in the highest age class it was the women who used the corset more often.

Table 4 shows the distribution of the diagnoses at the time of prescription of the corset and the frequency of the use of the corset at the time of the interview. In the pooled group of chronic lumbago and chronic lumbago-sciatica the frequency with which the corset was used corresponded roughly to that in the sample as a whole, i.e. half of the original sample used the corset and the other half did not.

The other diagnostic groups were small, yet the following tendencies could be discerned. The frequency in the fracture group was slightly lower, probably because this group included fresh fractures requiring the use of a corset for only some months. The frequency in the group of acute lumbago-sciatica was higher than in any of the other groups, probably because the symptoms in this group are mainly physical. The large pooled group may comprise some patients with social and/or psychosomatic problems which cannot be solved by use of a corset.

Table 3
Age distribution of users and non-users with symptoms at time of interview.
(Thirty-eight patients had become symptom-free and stopped using the corset by the time of the interview and are excluded.)

Age at prescription	Men		Women		Total	
	Users	Non-users	Users	Non-users	Users	Non-users
-25	1	3	0	1	1	4
26-40	9	4	3	14	12	18
41-55	22	12	15	9	37	21
56-70	15	2	28	6	43	8
71-	2	5	10	2	12	7
	49	26	56	32	105	58

Table 4

Distribution of users and non-users at time of interview among diagnostic groups. (Diagnosis made at time of prescription.)

	Users	Non-users
Chronic lumbago	58	50
Chronic lumbago-sciatica	17	22
Acute lumbago-sciatica	17	9
Vertebral body fracture	4	7
Miscellaneous	9	8
	105	96

In Table 5 the site of pain at interview is related to the frequency of the use of the corset at the time of the interview. The frequency was largely the same whether the pain was confined to the lumbar region or radiated down to below the knee. It was interesting to note that the number of patients with pain radiating to below the knee had diminished during follow up time (cf. Table 4).

Table 5

Use of corset relative to symptoms at time of interview

	Users	Non-users	Total
Pain in low back only	89	46	135
Pain radiating past knee(s)	9	4	13
Other pain or no answer	7	8	15
Symptom-free	—	38	38
	105	96	201

The frequency with which the corset was used is given in Table 6. If groups 1, 2 and 3 be pooled, it would mean that about half (48·6 per cent) still used their corset at least once a week.

Table 6

Use of corset by the 105 users

1	Always, day and night	1
2	Always during the daytime	35
3	At least once a week	15
4	At least once a month	25
5	At least once a year	25
6	Irregularly	4
		105

If groups 1 and 2, 3 and 4 be taken together and groups 5 and 6, it would mean that a third wore the corset daily, a good third at least once a week or month, and barely one-third at least once a year or irregularly.

Table 7

Distribution of users and non-users by occupation

Occupation	Men		Women	
	Users	Non-users	Users	Non-users
Light work	12	10	16	25
Heavy work	26	22	22	24
Pensioners	11	11	18	4
	49	43	56	53

In Table 7 the use of the corset is related to occupation. The 201 patients represented 64 occupations, which were distributed among three groups: light work (office workers, housewives in town, inspectors, executives or the like), heavy work (farm labourers, workers in heavy industry or workshop, farmer's wives and the like) and pensioners.

The men used a corset equally often whether their work was heavy or light. But women with heavy work seemed to use their corset more often than the other women. Female pensioners seemed to use their corset more often than men of corresponding age.

Table 8

Reasons for using corset

Relieves pain	5
Supports back	56
Relieves pain and supports back	38
Other reasons	2
No answer	4
	105

Table 8 gives the reasons why the patients used their corsets. It was astonishing that though the questions were by no means leading, the patients fell into two large groups. Support of the back with or without relief from pain was the reason given by 89 per cent. Only 5 per cent reported alleviation of pain as the only reason.

Table 9
Reasons for not using corset

Symptoms ceased	38
Corset does not help	7
Corset does not fit	37
Other reasons or no answer	14
	96

During the period in question the corsets used were of 6 types, but the frequency with which they were used did not vary with type.

As for the 96 non-users who stopped using corsets (Table 9) the 38 who became symptom-free have been accounted for earlier. That 37 of 96 reported that the corset did not fit properly suggests that the standard of work at the corset workshop had been unsatisfactory but when questioned the workers there reported that patients were always requested to return if they were not satisfied with the fit of the corset. It was interesting to note that only 7 said that the corset had not helped at all. The figure is astonishingly low and might be explained by the unwillingness of patients to say anything unfavourable about the treatment they had been given.

Table 10
Patient opinion of corset. Main complaint only.

Extends too far up or down	17
Too stiff or hard	30
Too tight or too loose	12
Presses or chafes	16
Too warm	6
Too short	5
No comments	115
	201

The patients' opinions of the main defect of the corset are given in Table 10. Caution must of course, be exercised in the evaluation of these opinions. If a corset had really been too long or too short, it could surely have been adjusted when the patient was being fitted with it. The other defects reported may have been due to a poor fit, but the true cause of complaint may be that the patients had not worn their corsets long enough to get used to them.

More information when a patient is being fitted with a corset and possibly also follow-up would certainly increase the frequency of the use of the corset to the advantage of the patients, remembering that only 7 patients stated that the corset was of no help.

Summary

Two hundred and one randomly selected patients (109 women and 92 men) fitted with their first lumbosacral corset because of low back pain were interviewed 3·5–4·5 years later.

Two-thirds of the patients were 41–70 years when fitted with the corset. Barely three-quarters of them wore the corset regularly immediately after prescription. One-fifth became symptom-free within the period covered by the study. Of those who still had symptoms at the time of the interview, two-thirds (about half of the original material) were still wearing a corset. Of these two-thirds, about half wore the corset at least once a week. The women doing heavy work and female pensioners tended to use their corsets more frequently. The frequency with which the corsets were used was not influenced by the clinical diagnosis or the type of corset used. As many as 89 per cent of the patients reported that they used the corset because it supported their back or because it not only gave such support, but also relief from the pain. Thirty-seven of 96 non-users reported that the corset did not fit well but only 7 that they did not benefit from the use of the corset.

A better follow-up of users would surely increase the frequency with which such corsets are used to the advantage of the patients.

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