PATTERNS OF MUSCULOSKELETAL PAIN IN SELECTED OCCUPATIONS

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ABSTRACT

The objective of this study was to identify the patterns of chronic or recurrent musculoskeletal pain in selected occupations (auto-mechanics, typists and secretaries, fashion designers and market traders) and to discuss the prospect of introducing an educational package for the prevention/rehabilitation of such chronic pains. A survey was conducted using a questionnaire that was circulated to randomly selected auto-mechanics, typists and secretaries, tailors/sewing mistresses (fashion designers), market traders and some others as a general group. Information on age, gender, site/region of pain, acuteness, chronicity, recurrence, and attitude in respect of such painful conditions were collected. General body pain, neck pain and low back pain were common in all the occupations. The rate (per cent) of low back pain was high among auto-mechanics and secretaries/typists. Seventy-nine per cent of the respondents were willing to participate in an educational programme for the prevention and rehabilitation of recurrent and chronic conditions.

Key words: musculoskeletal pain, occupational health hazards

INTRODUCTION

Pain as a concept in human experience,[1] is primarily measured as a subjective report. The International Association for the Study of Pain (IASP) has defined pain as 'an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage'.[2] Loeser[3] described four dimensions to the problem of pain - nociception, pain, suffering and pain behaviour. *Nociception* is the impinging of the damaging energy - thermal or mechanical - upon specialized nerve endings that in turn activate A-delta fibres and C-fibres. *Pain* itself is the nociceptive input to the nervous system. *Suffering* is the negative affective response generated in higher nervous systems by pain and other situations like stress, anxiety, etc. *Pain behaviour* encompasses all forms of behaviour generated by the individual commonly understood to reflect the presence of nociception; these include speech, facial expressions, posture, the seeking of medical attention, the use of medication and inability to work.

Empirical evidence has shown that nociception and pain have subjected many people to suffering and made them exhibit pain behaviour.[1, 4] The

consequences of suffering and pain behaviour include: low quality of life (QOL); and low productivity at work, even for those who ignore the signals of pain. Non specific low back pain has been observed to be common in individuals engaged in most occupations, from the industrial worker to the top executive. Among top executives, mechanical factors, poor sitting postures, chronic strain, weakness of the back muscles, stress, tension and fatigue all contribute to musculoskeletal pain.[5]

In order to promote good QOL, and enhance the quality of services, productivity, and work through the prevention of injuries and ill health, the Department of Local Government Studies and Institute of Public Health of Obafemi Awolowo University, Ile-Ife organized two separate workshops. The first was held in February 1999 for top officials of Osun State LGAs. One of the authors of this paper (Olaogun) presented a paper on 'Work and Back Pain'. The second workshop by the Institute of Public Health, titled 'Health, Hypertension and Back Pain' was open to the general public, however, only 50 participants attended the workshop. The majority of the beneficiaries were top government executives. Two of the authors of this paper served as resource persons. The results from these workshops indicated that a lot of people suffer from chronic musculoskeletal pain. Some were unaware that such chronic pain can be rehabilitated. It was obvious, however, that the people in the categories of occupations addressed in this study did not participate in the workshops. An attempt to ascertain their vulnerability to hazards at work that can result in musculoskeletal pain served as the basis for this study. It was also envisaged that findings from this study would serve as guidelines for the development of an educational programme for the prevention and rehabilitation of such pain.

METHODOLOGY

To develop a questionnaire on the patterns of chronic musculoskeletal pain, knowledge about such pain, and attitudes towards the pain, four steps were followed.

First, a list of musculoskeletal injuries and conditions was prepared. Second, a questionnaire was prepared and tested in a pilot survey, and modified accordingly. Third, a training session was organized for the physiotherapists, clinical psychologist and nurse educator that took part in the survey. Finally, the questionnaires were administered to randomly selected secretaries/ typists, auto-mechanics, fashion designers, market traders and unspecified members of the low socio-economic group. The responses were collated, analyzed and interpreted.

QUESTIONNAIRE

A total of 100 questionnaires were distributed. The total population that responded to the questionnaire was 52, with at least 5 from each group. There was a preliminary training on the use of the semi-structured questionnaire before its administration. The questionnaire listed the conditions with possible areas or situations of occurrence using the present pain index (PPI)[6] to score the items on a scale of 0-5 thus:

0 ---------- No pain
1 ---------- Mild
2 ---------- Moderate
3 ---------- Slightly severe

4 ---------- Horrible
5 ---------- Excruciating

Knowledge (or the idea) about the pain and the attitude of the respondent towards the pain were assessed. Information on the willingness of the respondents to participate in a preventive and rehabilitative programme was also obtained. The questionnaire collected information on relevant demographic details including the occupation of the respondent at the first occurrence of the pain and his/her present occupation.

RESULTS

The age range of the respondents was 21-79 years. From table 1, however. the frequency of ranges showed that the majority of the respondents were between 41-50 years of age. There was a preponderance of male respondents (see table 2).

Table 1. Age Distribution

Age	Frequency	% Total
21-30	13	25
31-40	13	25
41-50	17	32.7
51-60	6	11.5
Above 60	3	5.8
Total	52	100

Table 2. Sex Distribution

Sex	Frequency	% Total
Male	34	65.5
Female	18	34.6

Table 3 provides information on the respondents' occupations. All 10 respondents from the auto-mechanics group were male. With respect to painful musculoskeletal sites low back pain (LBP) scored the highest percentage (50%), followed by general body pain (21.15%), and joint pain (13.5%) (table 4). Neck pain and general back pain scored 7.69% and 5.7% respectively. Headache (1.9%) was added to the questionnaire as it went round. None of the respondents complained of chest pain.

Table 3. Occupations

Occupation	Frequency		Total	
	Male	Female	No.	%
Secretary/ typist	5	6	11	21.2
Auto-mechanic	10	0	10	19.2
Market trader	9	4	13	25
Fashion designer	2	3	5	9.6
Other	8	5	13	25
Total	34	18	52	100%

Table 4. Pain Location/Pattern

Pain site/type	Frequency	% total
General body pain	11	21.15
General back pain	3	5.77
Low back pain	26	50.00
Neck pain	4	7.69
Chest pain	-	0.00
Joint pain	7	13.46
Headache	1	1.92

Patterns of musculoskeletal pain among the groups of respondents are shown in table 5. Low back pain was prevalent among secretaries and typists, auto-mechanics and 'others'. This was followed by general body pain and joint pain amongst market traders (table 5). There was a low

prevalence of neck pain, though it was common to all the occupational groups. Table 6 shows the mean plus standard deviation of age of respondents, PPI, and duration of the chronic or recurrent conditions in all the groups of respondents.

Table 5. Frequency/pattern of Conditions in Groups

Occupation	Gen. Body	Gen. back	Low back	Neck	Joint	Headache	Total
Sec./typist	2	-	7	1	1	-	11
Auto-mechanic	-	1	8	1	-	-	10
Market trader	6	1	1	1	3	1	13
Fashion designers	2	-	1	1	1	-	5
Other	1	1	9	-	2	-	13
Total	11	3	26	4	7	1	52

Table 6. Relationship Between Duration of Pain and PPI in the Different Professions

Profession	Mean Age (yrs)	Mean PPI	Mean Duration
Secretary/typist	42.82 ± 6.32	2 ± 0.47	10 ± 5.45
Auto-mechanic	38.0 ±9.7	2.4 ± 0.84	0.96 ±7.5
Market trader	45.31 ± 9.92	2.31 ± 0.63	10.65 ±8.99
Fashion designer	28.3 ± 6.42	1.82 ± 0.57	4.47 ± 7.9
Other	44.69 ±15.77	2.85 ± 0.99	5.91 ±6.15

Table 7. Respondents 'Knowledge' of Pain

'Knowledge'	Group 1	Group 2	Group 3	Group 4	Group 5
Caused by overwork	9	9	11	5	8
Posture	-	-	-	5	3
Accident	-	1	-	-	-
Just happens	9	-	2	-	-
Pain preventable	11	10	13	-	-
Curable	1	10	12	5	12
Caused by age	-	-	-	-	3
Caused by pregnancy/menstruation	-	-	-	3	2

Table 8. Respondents' Attitude/Distribution According to Previous Treatment

Previous Treatment	Frequency	% Total
Medical	14	26.92
Physiotherapy	0	0
Self	48	92.31
Refusal to work	24	46.15
No treatment	4	7.69

DISCUSSION AND CONCLUSION

Low back pain was predominant and occurred in all the groups studied. Low back pain was not only prevalent among the secretaries/typists and auto-mechanics, it was also observed to be a common complaint in the 'other' group. This observation supports the findings of Olaogun[7] that low back pain may not be peculiar to a particular occupation but is a common ailment in workers. Asogwa's study[8] also revealed that back pain is one of the leading occupational hazards in Nigeria. Common occupational injury to the back is a simple myofascial strain but a sudden increase in stress may indicate a strain on some intervertebral ligaments.[9] Chaffin[9] reported that 12% of all industrial injuries are back disorders that have resulted from poor lifting postures. The reports support our findings that the auto-mechanics, who often engaged in lifting heavy objects, were mostly afflicted by LBP. It was also reported that between 80 and 90% of all back pain is caused by faulty mechanical and postural habits. In this study, the age range of secretaries/typists was 29-50 years and the mean pain rating was 2 $\pm$ 0.47. The duration of chronicity recurrence averaged 10 $\pm$ 5.45 years. It is assumed that this group of workers live essentially with chronic back pain.

The knowledge of how to prevent back pain was generally poor among the respondents. The three major groups (secretaries/typists, auto-mechanics and market traders) that usually subject their backs to mechanical stress while sitting or lifting did not consider posture as the possible cause of their chronic back pain. The majority of the respondents thought that chronic back pain was a part of life and that the more pain you can endure and go on with your work, the stronger you are. None of the respondents had had physiotherapy. The majority (77%) of the respondents were willing to participate in the educational programme for the prophylaxis and rehabilitation of their recurrent and chronic pains (see table 9).

Table 9. Respondents' Desire for Education Package on Prophylaxis

Occupation	Willing	Not Willing	Uncertain
Secretary/ typist	7	-	4
Auto-mechanic	6	-	4
Market trader	11	2	-
Fashion designer	5	-	-
Other	11	1	1
Total	40	3	9
Percentage	77%	6%	17%

Since back pain is a prevalent human problem which causes absenteeism, a loss of working hours and mental fatigue, it is necessary to build a defense against the occurrence of this condition. The irony, however, is that back pain has maintained a defiant stance against various therapeutic strategies and its epidemiology is still obscure.[10] Education on the proper way to lift, sit, walk, etc. is still the most viable method for

preventing back pain. Good posture, correct lifting techniques, and regular back exercise should be advocated as a means of reducing the incidence of back pain.

In conclusion, it is hypothesized that an educational package to alleviate abnormal stress or painful conditions related to selected occupations will be beneficial in either rehabilitating chronic conditions or preventing damage to the musculoskeletal system under working conditions.

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