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Quality of life of workers suffering from shoulder pain

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Background and aim

Shoulder pain (SP) is a common upper extremity musculoskeletal disorder in the working population that causes long periods of absence from work.

Using data from the surveillance program for musculoskeletal disorders in the working population of the Pays de la Loire region, the aim was to compare quality of life (QoL) in three groups of workers with and without SP lasting more than one month during the preceding 12 months.

Methods

Study population

- Working population of the Pays de la Loire region, France
- Between 2002 and 2005, 3,710 workers (58% men) were randomly selected
- In 2007, a follow-up questionnaire was mailed to subjects : 2,332 respondents ⇒ 2,049 active workers



Shoulder pain (SP)

- The presence of SP lasting more than one month during the preceding 12 months was collected using the **Nordic Questionnaire**.
- Three groups were defined according to health status at follow-up:
 - No shoulder pain: Workers without SP
 - Shoulder pain alone: Workers with SP and without neck, elbow and hand/wrist pain lasting more than one month during the preceding 12 months
 - Shoulder pain with neck and/or upper limb pain: Workers with SP and neck, elbow or hand/wrist pain lasting more than one month during the preceding 12 months

Quality of life (QoL)

- QoL was assessed using the **SF-36** [1]. The SF-36 consists of 36 items covering eight scales:
 - Physical Functioning (PF)
 - Role limitations relating to physical health (RP)
 - Bodily Pain (BP)
 - General Health (GH)
 - Vitality (VT)
 - Social Functioning (SF)
 - Role limitations relating to mental health (RE)
 - Mental Health (MH)
- The score for each of the eight scales range from 0–100. A higher score indicates better health.

Statistical analysis

- The SF-36 scores were compared between the three groups with multivariate linear regression analyses. Adjustments were made for age, BMI, education and major health problem.
- Analyses were stratified by gender.

Results

Study population

- **1,995 exploitable questionnaires** (1,145 men and 850 women)
- More women had SP with neck and/or upper limb pain: 14.8% vs. 7.9% for men (Table)

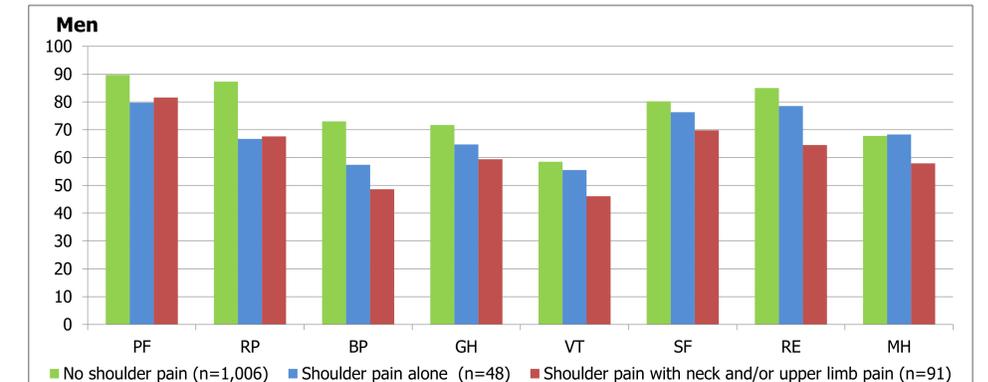
Table: Distribution of workers by pain group, age and occupational category according to gender

| Group | Men | | Women | | p-value |
|--|-------|------|-------|------|------------------|
| | n | % | n | % | |
| No shoulder pain | 1,006 | 87.9 | 673 | 79.2 | <0.001 |
| Shoulder pain alone | 48 | 4.2 | 51 | 6.0 | |
| Shoulder pain with neck and/or upper limb pain | 91 | 7.9 | 126 | 14.8 | |
| Age, in years | | | | | 0.697 |
| <30 | 113 | 9.9 | 73 | 8.6 | |
| 30-39 | 331 | 28.9 | 238 | 28.0 | |
| 40-49 | 373 | 32.6 | 283 | 33.3 | |
| ≥ 50 | 328 | 28.6 | 256 | 30.1 | |
| Occupational category | | | | | <0.001 |
| Technicians and associate professionals | 293 | 26.0 | 187 | 22.2 | |
| Lower-grade white-collar workers | 75 | 6.7 | 389 | 46.2 | |
| Blue-collar workers | 579 | 51.4 | 199 | 23.6 | |
| Other* | 179 | 15.9 | 67 | 8.0 | |

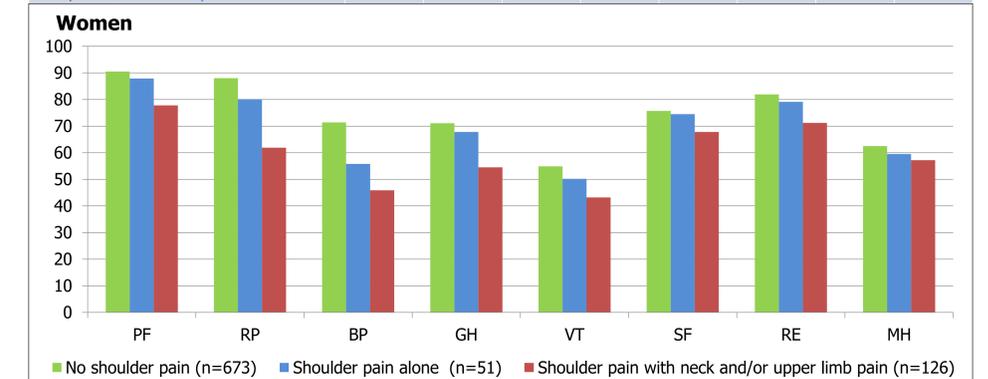
*Farmers (n=2), Craftsmen, salesmen and managers (n=29) and Managers and professionals (n=218)

Quality of life

- QoL was significantly different between the three groups, for both genders.
- Workers with SP and neck and/or upper limb pain had significantly lower scores in the eight scales of the SF-36 compared to workers without SP, for both genders (Figure).
- Male workers with SP alone had significantly lower scores for PF, RP, BP and GH and female workers had significantly lower scores for PF and BP than workers without SP.
- Compared to workers with SP alone, workers with SP and neck and/or upper limb pain had significantly lower scores for:
 - VT and MH in men
 - PF, RP, BP, GH and VT in women



| | PF | RP | BP | GH | VT | SF | RE | MH |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| Shoulder pain with neck and/or upper limb pain vs. No shoulder pain | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Shoulder pain alone vs. No shoulder pain | <0.001 | <0.001 | <0.001 | <0.05 | NS | NS | NS | NS |
| Shoulder pain with neck and/or upper limb pain vs. Shoulder pain alone | NS | NS | NS | NS | <0.05 | NS | NS | <0.001 |



| | PF | RP | BP | GH | VT | SF | RE | MH |
|--|--------|--------|--------|--------|--------|--------|--------|-------|
| Shoulder pain with neck and/or upper limb pain vs. No shoulder pain | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.01 |
| Shoulder pain alone vs. No shoulder pain | <0.05 | NS | <0.001 | NS | NS | NS | NS | NS |
| Shoulder pain with neck and/or upper limb pain vs. Shoulder pain alone | <0.01 | <0.001 | <0.05 | <0.001 | <0.05 | NS | NS | NS |

Figure: Comparison of quality of life according to pain group in men and women

Conclusion

- More women had SP.
- Workers with SP, especially those with neck and/or upper limb pain, had lower QoL compared to workers without SP.

References

1. Ware JE Jr, Sherbourne CD. The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. Med Care. 1992;30(6):473-483.