Playing-Related Musculoskeletal Problems among Professional Orchestra Musicians in Scotland – A Prevalence Study using a Validated Instrument

The Musculoskeletal Pain Intensity and Interference Questionnaire for Musicians (MPIIQM)

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Background

Many epidemiological surveys on playing-related musculoskeletal disorders (PRMPs) have been carried out among professional musicians, but none evaluated or confirmed the psychometric properties of the self-report instruments that were used.[1,2]

Purpose

The aim of the study was to evaluate the prevalence of PRMPs among professional orchestra musicians in Scotland, and to gather information on pain intensity and pain interference on function and psychosocial variables, using a self-report instrument developed and psychometrically validated for a population of professional orchestra musicians.

Methods

- Out of 183 professional orchestra musicians from three Scottish orchestras, 101 took part in the study (55% response rate), and completed the **Musculoskeletal Pain Intensity and Interference Questionnaire for Musicians (MPIIQM).**[3]
- Exploratory factor analysis demonstrated that the MPIIQM had a strong and stable two-factor structure **(Table 1)**. The factorial solution explained 71.3% of the variance in the data. Internal consistency and test-retest reliability of the MPIIQM were adequate.[3,4]
- Statistical tests were performed using a 5% level of significance ($\alpha = 0.05$).

Results

- The sample was evenly split between males (50.5%) and females (49.5%). The mean age of participants was 47.7±10.4 (SD) years (range 25-65 yrs).
- The musicians had played professionally in an orchestra for 23.5±11.1 years.
- Lifetime prevalence of PRMPs was 77.2%, 1-year prevalence was 45.5%, and point prevalence was 36.6% (n=37).

Results (cont'd)

- Of the PRMP group, 43% reported having pain in three or more anatomical areas, and no statistically significant relationship was found between gender and the number of reported pain sites ($\chi 2 = 2.571$, $p = 0.463$).
- The most commonly reported locations of PRMPs were the right upper limb, neck, and left forearm and elbow **(Table 2)**.

Table 1 Factor loadings for the 9 core items of the MPIIQM following Exploratory Factor Analysis with principal axis factoring (oblique rotation)

Questionnaire Item	Factor 1 Pain Intensity	Factor 2 Pain interference
Worst pain	0.830	
Least pain	0.814	
Average pain	0.979	
Pain right now	0.783	
Mood		0.848
Enjoyment of life		0.818
Using your usual technique		0.797
Playing because of symptoms		0.695
Playing as well as you would like		0.895

Table 2 Prevalence of PRMPs by anatomical site expressed in numbers

Anatomical site	Males (N=51)	Females (N=50)	Total (N=101)
Right forearm and elbow	4	11	15
Neck	6	8	14
Right shoulder and upper arm	2	11	13
Right wrist and hand	5	7	12
Left forearm and elbow	6	6	12
Left shoulder and upper arm	4	6	10
Left wrist and hand	4	4	8
Lower back	4	4	8
Upper back	4	3	7
Right lower limb	0	4	4
Left lower limb	0	3	3
Head, Face, Lips	0	3	3

Results (cont'd)

- Predominant sites of PRMPs varied between instrument groups.
- The mean pain intensity score for the PRMD group was 12.4±7.63 (out of 40).
- The mean pain interference score was 15.2 ± 12.39 (out of 50), increasing significantly with the number of reported pain locations ($F = 3.009$, $p = 0.044$).
- There were no statistically significant differences between males and females for the pain intensity ($t = 0.145$, $p = 0.882$) and pain interference ($t = 0.434$, $p = 0.064$) scores.
- There were no statistically significant differences between instrument groups in either of the two constructs.

Conclusions & Recommendations

- This study confirms that musculoskeletal complaints are common in elite professional musicians, and that the use of an operational definition[5] and a validated self-report instrument[3] allows for more accurate and meaningful estimates of pain prevalence.

References

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Further Information

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