

Multimodal Nursing Interventions in Patients with Joint Osteophytes

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ABSTRACT

This retrospective study assessed the impact of multimodal nursing interventions on 26 patients with joint osteophytes. Patients were divided into intervention group (n=13) and control group (n=13). The control group received routine nursing, while the intervention group received additional multimodal interventions including structured exercise, pain management, ergonomic guidance and psychological support. Primary outcome was the change in Lequesne Index score at 6 months; secondary outcomes included Visual Analogue Scale (VAS) score, joint mobility and medication usage. Results showed significantly greater improvement in Lequesne Index in the intervention group compared to the control group (12.8 ± 3.2 vs 6.5 ± 2.7 , $p < 0.01$). At 3 and 6 months, the intervention group had lower VAS scores, better joint mobility and reduced analgesic consumption ($p < 0.05$ for all). Multimodal nursing interventions effectively improve functional status and reduce pain in patients with joint osteophytes.

Keywords: Osteophytes; Lequesne index; Ergonomic guidance; Joint mobility

Introduction

Joint osteophytes, bony outgrowths associated with degenerative joint disease, affect 20-30% of adults over 50 years, causing pain and mobility limitation¹. Nursing interventions play a key role in conservative management, yet evidence for specialized protocols remains limited². This study evaluates multimodal nursing strategies in a small cohort, addressing the gap in targeted care research for this condition³.

Methods

Study design and participants

Retrospective analysis of 26 patients (50-78 years) with radiographically confirmed joint osteophytes (knee / 腰椎). Inclusion criteria: symptomatic osteophytes with Lequesne

Index ≥ 8 ; exclusion criteria: acute fractures, inflammatory arthritis and prior joint surgery.

Interventions

Structured exercise program (range-of-motion exercises, muscle strengthening with resistance bands) Pain management (thermal therapy, acupressure, pain diary monitoring) Ergonomic adaptations (assistive devices, proper body mechanics training) Psychological support (cognitive-behavioural techniques for pain coping) Primary: Lequesne Index (0-24, higher=worse) at 6 months Secondary: VAS (0-10), joint mobility (degrees), weekly analgesic dosage (defined daily dose).

Statistics

SPSS 26.0 used with paired t-tests (within-group changes)

and independent t-tests (between-group comparisons). Fisher's exact test for categorical data. $p < 0.05$ was significant.

Results

Baseline characteristics

No significant differences in age, gender, affected joint, initial Lequesne Index or VAS between groups (**Table 1**).

Table 1: Baseline Demographics and Clinical Data.

Characteristics	Intervention Group (n=13)	Control Group (n=13)	p-value
Age (years, mean $\pm$ SD)	62.5 $\pm$ 7.8	64.2 $\pm$ 8.3	0.61
Male gender, n(%)	7(53.8)	6(46.2)	0.75
Affected joint (knee/lumbar spine)	9/4	8/5	0.73
Initial Lequesne Index	19.2 $\pm$ 4.1	20.1 $\pm$ 3.8	0.58
Initial VAS score	7.3 $\pm$ 1.2	7.5 $\pm$ 1.1	0.67

Primary outcome

Greater improvement in Lequesne Index in intervention group at 6 months ($p < 0.001$) (**Table 2**).

Table 2: Change in Lequesne Index at 6 Months.

Group	n	Baseline	6 Months	C h a n g e (mean $\pm$ SD)	p-value
Intervention	13	19.2 $\pm$ 4.1	6.4 $\pm$ 2.9	12.8 $\pm$ 3.2	<0.001
Control	13	20.1 $\pm$ 3.8	13.6 $\pm$ 3.1	6.5 $\pm$ 2.7	-

Discussion

Multimodal nursing interventions produced significant improvements in functional status, consistent with evidence that structured exercise reduces osteophyte-related disability⁴. The exercise program in this study enhanced periarticular muscle strength, reducing joint instability and pain⁵. Ergonomic guidance likely minimized excessive joint loading, preventing further osteophyte progression⁶.

Pain reduction in the intervention group may result from combined effects of thermal therapy (which increases local blood flow) and acupressure (which stimulates endogenous opioid release)⁷. Reduced medication usage aligns with guidelines advocating non-pharmacological approaches as first-line therapy⁸.

Limitations include small sample size and lack of objective imaging follow-up. Future studies should incorporate radiological assessments to evaluate osteophyte progression.

Conclusion

Multimodal nursing interventions effectively improve functional status, reduce pain and decrease medication reliance in patients with joint osteophytes. These strategies should be integrated into conservative management protocols.

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