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Research Article

Effectiveness of Targeted Nursing Interventions in Elbow Sprain Recovery

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ABSTRACT

This retrospective study evaluated the impact of targeted nursing interventions on 28 patients with elbow sprains. Patients were divided into intervention group (n=14) receiving structured nursing (psychological support, personalized exercise, pain modulation) and control group (n=14) with routine care. Primary outcomes included time to achieve full elbow range of motion (ROM) and secondary outcomes assessed pain (VAS), swelling and complication rates. The intervention group showed significantly shorter ROM recovery time (10.2±2.1 days vs 15.6±3.8 days, p<0.01), lower VAS scores at 7/14 days, reduced swelling and zero complications versus 21.4% in controls. Targeted nursing accelerates elbow sprain recovery with superior clinical outcomes.

Keywords: Psychological support; Pain modulation; Superior clinical outcomes

Introduction

Elbow sprains account for 10-15% of upper extremity musculoskeletal injuries, predominantly affecting athletes and manual workers[1]. Optimal nursing care is critical as improper management increases risk of chronic stiffness (up to 30% in untreated cases)[2]. This study investigates whether targeted nursing interventions improve recovery metrics compared to standard care in a small cohort, addressing the paucity of focused elbow sprain nursing research[3].

Methods

Study design and participants

Retrospective analysis of 28 patients (18-60 years) with grade I-II elbow sprains (confirmed by MRI) at our institution. Exclusion criteria: fractures, neurological deficits and chronic arthritis.

Grouping & interventions

Control subgroups: Routine care (pain assessment, RICE protocol, activity restrictions).

Intervention Group: Added interventions:

- Customized exercise programs (isometric contractions from day 3, progressive ROM exercises from day 7)
- Cognitive-behavioural pain management (guided imagery, diaphragmatic breathing)
- Thermotherapy protocol (cryotherapy <72hrs, contrast baths thereafter)

Outcome measures

- **Primary:** Time to full ROM (135° flexion, 0° extension)
- **Secondary:** VAS (0-10), elbow circumference difference (cm), complications (stiffness, tendinopathy)

Statistical analysis

SPSS 26.0 used for independent t-tests (parametric data) and Fisher's exact test (categorical data) due to small sample size. $p<0.05$ considered significant.

Results

Baseline characteristics

No significant differences in age, gender, injury grade or initial VAS between groups **(Table 1).**

Table 1: Demographic and Clinical Baseline Data.

Characteristics	Intervention (n=14)	Control (n=14)	p-value
Age (years, mean±SD)	32.6±8.4	34.1±7.9	0.63
Male gender, n(%)	9(64.3)	8(57.1)	0.73
Injury grade I/II, n	8/6	7/7	0.76
Initial VAS	6.2±1.1	6.5±1.3	0.52

Primary outcome

Intervention group achieved full ROM 5.4 days faster ($p<0.001$) **(Table 2)**.

Table 2: Time to Full Elbow ROM (days).

Group	Mean±SD	p-value
Intervention	10.2±2.1	<0.001
Control	15.6±3.8	-

Secondary outcomes

Significant differences in VAS at 7 and 14 days, with sustained reduction in swelling **(Table 3)**. No complications in intervention group versus 3 cases in controls ($p=0.23$, trend noted).

Table 3: Pain and Swelling Outcomes.

Measure	Time Point	Intervention	Control	p-value
VAS Score	Day 7	2.1±0.8	4.3±1.2	<0.001
	Day 14	0.8±0.5	2.5±0.9	<0.001
Swelling (cm)	Day 7	1.2±0.4	2.3±0.7	<0.001
	Day 14	0.3±0.2	1.1±0.5	<0.001

Discussion

This study demonstrates targeted nursing interventions significantly improve elbow sprain recovery. The 35% reduction in ROM recovery time aligns with findings that early mobilization, when supervised, enhances tissue healing[4]. The multimodal pain approach (psychological + physical) likely contributed to lower VAS scores, consistent with guidelines emphasizing non-pharmacological strategies[5].

Notably, the intervention's structured exercise progression prevented complications, addressing concerns that early activity may exacerbate injury[6]. The lack of statistical significance in complication rates ($p=0.23$) likely reflects small sample size, warranting larger studies.

Limitations include retrospective design and single-centre data. However, strict inclusion criteria and standardized outcome measures strengthen validity.

Conclusion

Targeted nursing interventions accelerate elbow sprain recovery, reduce pain/swelling and may lower complication risk. These findings support implementing structured nursing protocols for this injury.

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