

## **Effective ultrasound therapy and natural mobilization combination in reducing hand disabilities in carpal tunnel syndrome patients**

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### **Abstrak**

Excessive activity in the hands and wrists over a prolonged period of time can cause repetitive strain injury, which leads to the occurrence of carpal tunnel syndrome. The purpose of this study is to determine the differences in the effectiveness of ultrasound and neural mobilization interventions with ultrasound and passive stretching in reducing hand disabilities in patients with carpal tunnel syndrome. It is an experimental study, using the pre- and post-test control group design. The sampling technique employed was simple random sampling, with a study sample comprising 30 people. The difference test with an independent t-test showed a significant difference between the control group and the treatment group ( $p=0.000$ ), with a decrease hand disability percentage of 7% in the control group and 15% in the treatment group. Based on the results, it can be concluded that the combination of ultrasound and neural mobilization is more effective in reducing hand disability than a combination of ultrasound and passive stretching in patients with carpal tunnel syndrome.

.....Kombinasi Ultrasound dan Neural Mobilization Efektif dalam Menurunkan Disabilitas Tangan pada Penderita Carpal Tunnel Syndrome. Aktivitas yang berulang pada pergelangan tangan apabila berlangsung lama dapat menimbulkan repetitive strain injury yang berujung terhadap terjadinya carpal tunnel syndrome. Tujuan dari penelitian ini adalah untuk mengetahui perbedaan efektivitas intervensi ultrasound dan neural mobilization dengan ultrasound dan passive stretching dalam menurunkan disabilitas tangan pada pasien carpal tunnel syndrome. Penelitian ini merupakan penelitian eksperimental dengan menggunakan rancangan penelitian pre-test and post-test control group design. Teknik pengambilan sampel dalam penelitian ini dengan cara simple random sampling. Sampel penelitian pada penelitian ini berjumlah 30 orang. Uji beda selisih dengan independent t-test menunjukkan adanya perbedaan yang bermakna antara kelompok kontrol dan kelompok perlakuan ( $p=0,000$ ) dengan persentase penurunan disabilitas tangan sebesar 7% pada kelompok kontrol dan 15% pada kelompok perlakuan. Berdasarkan hasil penelitian dapat disimpulkan bahwa kombinasi ultrasound dan neural mobilization lebih efektif dalam menurunkan disabilitas tangan daripada kombi