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## PHYSIOTHERAPY AND REHABILITATION

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**Effect of pinch grip strengthening exercises and hand function among tea plantation workers****Tushar J Palekar**

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**Aim:** To assess the Pinch Grip Strength using Hydraulic Pinch Gauge and to find out the effects of pinch grip strengthening exercises in improving pinch grip strength on tea plantation workers.

**Methodology:** 60 samples within the age group of 25-50 years, both female and male who were working in the tea garden for more than 5 years were included in the study before taking a written consent from them. Participants who underwent any recent surgery or had injury/trauma to the upper limb (within 1 year), any neurological problem or hearing defect were excluded. Selection of the participants was done randomly. Pinch grip strength and two questionnaires, Hand Assessment Tool (HAT) and Patient Rated Wrist Evaluation (PRWE) were filled. Pinch grip strength was measured by baseline mechanical pinch gauge by taking three readings of each right and left hand. The quantity of tea leaves plucked was also assessed using standard weighing scale. These were a part of pre-experimental readings. Strengthening protocol was given for 4 weeks and 5 days a week i.e. for 20 sessions in a batch of 6x10 participants. 3 sets of exercises with 10 repetitions were performed and rest period of 1 min was provided between each set. After 4 weeks, post experimental readings were taken.

**Result:** Paired t-test was used to analyze the data of the pinch grip strength of both right and the left hand and for analyzing data of the amount of tea leaves plucked. The p value of all the three was found to be  $p < 0.0001$ , which makes it statistically significant. For HAT and PRWE, Wilcoxon test was used. The p value came out to be  $p < 0.0001$ . There was a reduction in the post value test indicating improvement in hand function.

**Conclusion:** Thus, the result shows that strengthening helps in improvement of pinch grip strength and hand function.

**Biography**

Tushar J Palekar is the Principal and Professor at Dr. D.Y. Patil College of Physiotherapy, Pune, India. He has nearly 20 years of professional experience in clinical as well as academics. He is a Doctorate of Philosophy (PhD) in Physiotherapy from Dr. D.Y. Patil Vidyapeeth, Pune. He received Significant Contribution Award from the Indian Association of Physiotherapists at Pune, India in 2011. He has co-authored a book and also has a patent to his credit. He has published and presented research papers in various national and international conferences.

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