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The Role of Sensory Re-Education Exercises in Diabetic Peripheral Neuropathy Management: A Narrative Review

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ABSTRACT

Diabetic neuropathy is a heterogeneous group of disorders with extremely complex pathophysiology and affects both somatic and autonomic components of the nervous system. The pathology of diabetic neuropathy is characterised by progressive nerve fibre loss that gives rise to positive and negative clinical sign and symptoms such as pain, paresthesia and loss of sensation. Neuropathy is the most common chronic complication of diabetes mellitus, resulting from long term high blood sugar levels that damage peripheral nerves, particularly in the limbs. This condition can lead to sensory loss, affecting somatosensation and balance. Articles published in peer-reviewed journals between 2015 to 2024 focussing on diabetic peripheral neuropathy and sensory re-education. The main outcome measures were semmes-weinstein, monofilaments neuropathic pain questionnaire, Cumulative Sensory Impairment Scale (CSIS), sensory and nerve conduction parameters, BBS, SF-36.

The review was conducted across databases such as PubMed, Scopus and Google Scholar. Keywords included “sSomatosensory,” “diabetic population,” “sensory re-education exercises,” and “neuropathy”.

Six free full-text articles were identified through PubMed and Google Scholar, adhering to objectives and inclusion criteria. Numerous studies have been conducted to analyse the role of sensory re-education exercises in diabetic population and significant changes were found, and improvement was noted in somatosensory component, post sensory re-education exercises. The study concluded that sensory re-education and interventions improve sensory and motor function in individuals with Diabetic Peripheral Neuropathy (DPN). Innovative tools like the diabetic exercise mat also enhance outcomes, reducing fall risk and improving quality of life for patients with type 2 diabetes.

Keywords: Diabetic neuropathy, Diabetic population, Somatosensory

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