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The Use of Rehabilitation Technology in Functional Tests for Osteoarthritis (OA) of the Knee: A Literature Review

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ABSTRACT

Osteoarthritis (OA), a common disease in the aged, may cause the structural integrity of joints to gradually decline, indicating that OA affects 10–20% of the elderly population. Clinical symptoms of OA in the knee joints, such as joint stiffness, discomfort, and functional deficits, may harm the quality of life (QoL) of people with OA. Among those having knee OA, rehabilitation technology can improve their QoL and functional outcomes. This review aimed to identify different types of rehabilitation technology and assess their effectiveness in enhancing functional outcomes for individuals with OA in the knee. A literature search was conducted from PubMed, Scopus, and Embase Data Base from December 2020 to December 2025. The search utilised terms such as “rehabilitation technology”, “machine learning”, “knee osteoarthritis”, “patellofemoral arthritis”, and “tibiofemoral arthritis”, employing Boolean operators (AND, OR). Related review articles, systematic reviews, conference papers, and articles in languages other than English were excluded. Two hundred thirty-nine articles were found from three databases, out of which only five met the inclusion criteria. These studies suggest that rehabilitation technology (virtual reality, wearable sensors, tele rehabilitation platforms) effectively and significantly improves functional outcomes. The findings suggest that patients with knee OA may find rehabilitation technology helpful in improving functional outcomes. The included research quality varied, and several had methodological problems despite the encouraging data.

Keywords: Functional test, Functional outcomes, Knee osteoarthritis, Machine learning, Virtual reality.