
| RESEARCH ARTICLE

Impact of Homecare Physical therapy on Parkinson's patients to improve functional mobility

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| ABSTRACT

Parkinson's disease (PD) is a neurodegenerative disorder that significantly impairs functional mobility due to symptoms such as bradykinesia, muscle rigidity, and postural instability. Homecare physical therapy (HPT) has emerged as a viable intervention to enhance mobility and quality of life for individuals with PD. This review examines the efficacy of HPT in improving functional mobility, muscle strength, balance, and overall physical activity levels in Parkinson's patients. HPT programs, involving tailored exercises for flexibility, strength, and balance, can lead to significant improvements, reducing the risk of falls and promoting functional independence in the individual. The flexibility of home-based sessions provides a comfortable and accessible environment, encouraging adherence to exercise regimens. Additionally, HPT allows for individualized treatment plans, addressing specific patient needs and progression of symptoms. Despite the positive outcomes, further research is needed to optimize exercise protocols and assess long-term benefits. Overall, HPT represents a promising approach to managing functional mobility challenges in Parkinson's disease, potentially enhancing the overall well-being and autonomy of affected individuals.

| KEYWORDS

Parkinson's disease, Homecare physical therapy, Physical function, Fall prevention, Functional mobility

| ARTICLE INFORMATION

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1. Introduction

Parkinson's disease is a second most common neurological condition that is progressive and degenerative in nature and is characterized by increasing complexity over a period of time. ^{[1][2]} It has long been distinguished by the classical motor features of Parkinsonism associated with loss of dopaminergic neurons in the substantia nigra. ^[3] However, the symptomatology of Parkinson's disease is now understood to be heterogeneous, encompassing clinically significant non-motor features. ^[4] The classical motor symptoms are a result of dopamine deficiency and include slowness of the movements termed as 'bradykinesia', muscle rigidity and postural rigidity. ^[5] Other motor symptoms include dysarthria (difficulty to speak clearly), dysphagia (swallowing difficulties), microphagia (a condition characterized by smaller handwriting due to reduced fine motor skills), gait difficulties like shuffling, festination and freezing, and dystonia (involuntary muscle contractions and spasms). ^[6] There is a wide range of non motor symptoms that develop secondary to serotonergic, noradrenergic, cholinergic, and autonomic nervous system involvement. ^[5] These symptoms involve autonomic dysfunction, cognitive/neurobehavioral abnormalities, sleep disorders and sensory abnormalities such as anosmia, paresthesias and pain. ^[7]

Parkinson syndrome (PS) is a common disorder in the North American population with the mean survival after onset is approximately 12.3 years. ^[8] Age is the most significant risk factor for Parkinson's disease, but exposure to industrial chemicals and pollutants, including pesticides, solvents, and metals, also appears to increase the risk. ^[9] Treatment options for Parkinson's disease are medications to control the symptoms, physical therapy for improving the physical mobility and reducing falls,

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occupational therapy for assisting the patient with daily living activities, and surgical interventions like deep brain stimulation might be considered for advanced cases. ^[10]

Homecare –

“Home care” refers to a range of healthcare and support services provided in a person’s home. These services are designed to help individuals who may need assistance with daily activities, medical care, or companionship. Home care can be beneficial for those recovering from surgery, managing chronic illnesses, or requiring support due to aging or disability. ^{[12][13]} The major goals of the homecare are to assist individuals in enhancing their functional abilities and achieving greater independence; support their optimal well-being; and help them stay at home, reducing the need for hospitalization or placement in long-term care facilities. ^[14]

Homecare physical therapy is a new emerging approach in the field of rehabilitation. It is a service where licensed physical therapists provide rehabilitation and treatment in the comfort of a patient's home. ^[15] Physical therapy involves providing services to patients in their homes instead of in a clinical or hospital setting. This approach is especially advantageous for those who face challenges traveling due to mobility limitations, chronic illnesses, or other health-related obstacles. ^[15] Homecare physical therapy is commonly used for post-surgical rehabilitation, chronic disease management (like Parkinson’s disease or arthritis), and recovery from injuries or strokes. It is a crucial component in promoting mobility, reducing pain, and improving overall well-being in a familiar and comfortable setting.

2. Key Aspects of Homecare Physical Therapy:

Personalized Treatment: It is specifically designed to meet the unique needs of each patient within their own home setting. This approach allows therapists to thoroughly assess the patient’s physical condition, daily routines, and living environment, enabling them to develop a treatment plan that is both effective and practical. By customizing therapy to address individual goals, limitations, and preferences, therapists can focus on exercises and interventions that are most relevant to the patient’s specific challenges.

Convenience: It removes the need for patients to travel, allowing them to receive regular therapy sessions more easily. This accessibility ensures consistency in treatment, which is essential for steady progress and recovery. ^[17]

Holistic Approach: It allows therapists to evaluate and adjust the home environment, enhancing safety and accessibility to minimize the risk of falls or injuries. It often involves collaboration with other healthcare providers like nurses, physicians, occupational therapists to ensure comprehensive care is delivered to the patient. ^[17]

Goal-Oriented: Focuses on improving functional abilities, like improving strength, coordination, safety awareness, endurance and reducing the balance impairment in order to enhance patient’s functional independence and quality of life. ^[18]

3. Homecare physical therapy for Parkinson’s:

Homecare physical therapy for Parkinson's disease focuses on improving mobility, balance, and overall physical function in the comfort of a patient's home. This tailored approach addresses the unique challenges faced by individuals with Parkinson's, such as stiffness, tremors, and difficulties with movement. ^[19] Therapists design personalized exercise programs to enhance strength, flexibility, and coordination, helping to manage symptoms and slow disease progression. Additionally, therapists assess the home environment to recommend modifications that improve safety and reduce fall risks. By receiving therapy at home, patients benefit from consistent, accessible care that supports greater independence and enhances their quality of life.

4. Benefits of Homecare physical therapy for Parkinson’s patients -

1. Personalized Care in a Familiar Environment:

Therapy sessions can be customized to the patient’s specific needs and challenges in their home, enhancing the relevance and effectiveness of exercises. Therapy in a comfortable and familiar environment can reduce anxiety and stress, which may positively impact the effectiveness of therapy. ^[20] Depending upon the patient’s symptoms like stiffness, balance impairments, gait difficulties a personalized approach can help address challenges in a unique way.

2. Improved Accessibility and Consistency:

Due to mobility issues, many Parkinson’s patients struggle to attend clinic-based therapy. Homecare eliminates the need for travel, allowing patients to receive consistent therapy in the comfort of their home. Therapy sessions can be scheduled at times that align with the patient’s routine and energy levels, offering greater convenience and adaptability. ^[21]

3. Safety and Fall Prevention:

Therapists conduct thorough assessments of the home environment to identify and modify potential hazards, such as eliminating tripping risks or recommending assistive devices, which helps reduce the likelihood of falls. In addition, functional training exercises are tailored to improve mobility and balance, focusing on the specific challenges patients face within their home setting, where they spend the majority of their time. ^[22] This approach ensures that therapy is both practical and effective in enhancing daily functioning and safety.

4. Encourages Independence:

Therapy emphasizes practical skills, such as safely getting in and out of bed or navigating stairs, to enhance the patient's independence in everyday tasks. As patients gain proficiency in these activities within their own home, their confidence increases, allowing them to manage daily routines with greater ease and improving their overall quality of life.

5. Enhanced Family Involvement:

Family members can actively participate in the therapy process, learning techniques to assist the patient and contribute to their ongoing rehabilitation. Additionally, caregivers receive direct training on how to support the patient in continuing exercises and maintaining progress between therapy sessions, ensuring consistent care and long-term improvement.

6. Focus on Holistic Care:

Homecare therapists provide a comprehensive, holistic approach by addressing not only the physical challenges of Parkinson's but also the emotional and psychological aspects, such as motivation and coping strategies. This all-encompassing care helps patients manage symptoms, enhance mobility, and improve their overall quality of life. Homecare physical therapy proves to be a practical, accessible, and effective solution for Parkinson's patients seeking to maintain independence and manage their condition more effectively.

5. Conclusion

Homecare physical therapy significantly improves physical function in Parkinson's patients by providing tailored, consistent, and accessible treatment in a comfortable environment. This personalized approach enhances mobility, balance, and independence, reduces fall risk, and integrates caregiver support, all of which contribute to a higher quality of life. By focusing on exercises suited to the home setting, patients can achieve better adherence to therapy regimens, leading to more effective management of Parkinson's symptoms and improved overall well-being.

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