

Rehabilitation of Brain disorders resulting in pathological gait and low quality of life: Focus on Parkinsonian gait

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The Parkinsonian gait with tendency to frequent falls is a characteristic movement deviation in Parkinson's disease. Steps are short and shuffling with rapid cadence. Tendency to frequent falls is inevitable. With generally reduced physical activity due to fear of fall the Quality of Life [QoL] of the patient with Parkinson disease [PDP] is low. Our study compared two physiotherapeutic regimes on balance confidence, gait and QoL of PDP.

"A Comparison of Virtual Reality Gaming and Activity based Gait and Balance Training on Physical Functioning and Quality of life in Patients with Parkinson's Disease".

- Our study reported no significant difference in outcome measures between Virtual Reality Gaming and Activity Based Gait and Balance Training in Physiotherapy
- Study also demonstrated that both Virtual Reality Gaming and Activity-based gait and balance training led to significant improvements in balance, step length, stride length, gait velocity, cadence and quality of life of patients with Parkinson's disease
- The results were/are without prejudice to the patients' compliance with their medications

Our findings

- Led to the establishment of PD support group in the Physiotherapy Department of Obafemi Awolowo University Teaching Hospital, Ile Ife, Osun State, Nigeria
- Sessions Hold Once every Month
- Talks were/are given and patients could/can ask questions
- Patients have improved attendance and access to quality rehabilitation

Parkinsonian gait is a distinguishing characteristic of Parkinson's disease, especially in later stages. This is also seen as having a more detrimental effect on quality of life than the effects of other Parkinson's. People usually take small, shuffling steps with Parkinsonian gait. They could be having trouble picking up their feet. Changes in Parkinson's gait can be episodic or permanent. Episodic changes, like freezing the gait, can happen suddenly and randomly. Continuous variations are variations in your gait that occur all the time while walking, like walking more slowly than you might expect. Parkinsonian gait is a distinctive, less steady walk that arises from changes in posture, slowness of movement (bradykinesia) and a shortened stride. This is characterized by some, but

not necessarily all, of the following:

- A tendency to lean unnaturally forwards in a stooped position when walking and, in some cases, a tendency to lean sideways when standing
- The head dropped forwards, with shoulders down, hips and knees bent
- Steps taken on the front of the feet
- Feet dragging on the ground, resulting in shuffling steps
- A reduced length of stride
- A reduced swing of the arm, especially on the side most visible to Parkinson's.

Rehabilitation in the acute care setting is largely focused on prevention of complications and on early prognosis. In the intermediate or the acute rehabilitation stage, medical issues persist, but there is emphasis on restoration of function and on acquisition of skills. In the late stage, medical issues are generally less prominent. Post acute rehabilitation programs are focused primarily on developing adaptive behaviors for the patient's successful independent or supervised reentry into the home, community, or work place. Leadership of the team providing services to accomplish these goals should be by an individual capable of assessing and promoting progress in this nonmedical, occasionally untraditional model of care. The physiatrist should function as an important postacute team member coordinating medical care interventions, such as the removal of heterotopic calcification. The goals and purpose of rehabilitation must be modified when the disease process is a progressive one. Rate of progression, periods of stability, and home environment must all enter consideration. In general, hospitalization should be kept to a minimum, with an emphasis on home-based or outpatient care if the disease is rapidly progressive.

If you develop this Parkinsonian gait you may experience some of the following problems:

- start hesitation - a hesitation in initiating movements such as walking
- difficulty making a turn due to slowness, stiffness or instability
- difficulty making transfers, e.g. getting out of a chair or bed
- freezing - a sudden inability to start or continue walking, as if glued to the spot
- postural instability (poor balance) which makes falls more likely

- festination - progressively shorter but accelerated steps forward, often in a shuffling manner or as if falling forwards, in an attempt to maintain the position of the feet beneath the forward moving trunk. This tends to occur in later in Parkinson's.

Some features of Parkinsonian gait are likely to become more pronounced over time, particularly festination, stooped posture and freezing. Your range of movements may change over the years and you may become less active as a result, which can reduce muscle strength and reflexes. This in turn can lead to musculoskeletal changes that exacerbate poor

posture and stooped stance and so increases the risk of falls.

If you become less mobile or feel unsteady it is easy to lose confidence because of a fear of falling. This may impact on your social activities and quality of life, so it is important to seek advice on how to improve gait.

Gait problems may also be related to medication becoming less effective over time, particularly if you experience 'wearing off'. You should therefore talk with your doctor as he or she may be able to adjust your medication to alleviate some gait related difficulties.