



EFFECTIVENESS OF SPECIFIC EXERCISE AND A NOVEL TURNING PROGRAMME TO IMPROVE THE QUALITY OF TURNING IN DAILY LIFE IN PEOPLE WITH PARKINSONS DISEASE

1Dr.V SANGEETHA MPT CARDIO, (Phd), ASSISTANT PROFESSOR, 2Prof DR B SENTHIL KUMAR, MPT, MIAP, PH.D, SRP (UK), UCA College of Paramedical Sciences, Chennai

ABSTRACT

Parkinson's disease is a progressive neurodegenerative disorder characterized by bradykinesia, rigidity, tremor, and postural instability, leading to impaired functional mobility and increased risk of falls. Turning difficulties are a major contributor to falls and reduced quality of life in affected individuals. This study aimed to evaluate the effectiveness of specific exercises combined with a novel turning program in improving the quality of turning in daily life among individuals with Parkinson's disease. Ten participants aged 50–60 years, diagnosed with idiopathic Parkinson's disease (Hoehn and Yahr stages II–III), were recruited. The intervention was conducted over six weeks, with three sessions per week, each lasting 30–45 minutes. Outcome measures included the Falls Efficacy Scale-International (FES-I) and Parkinson's Disease Questionnaire-39 (PDQ-39), assessed before and after intervention. The treatment protocol consisted of balance training, strengthening, functional mobility exercises, and a novel turning program incorporating figure-of-eight walking, axial mobility exercises, obstacle negotiation, and dual-task activities. Results demonstrated consistent improvements in FES-I and PDQ-39 scores across all participants, indicating reduced fear of falling and enhanced quality of life. The study concludes that the combined intervention effectively improves turning ability and functional mobility in individuals with Parkinson's disease.

KEYWORDS: Parkinson, Novel exercise, FES questioner

INTRODUCTION

Parkinson's disease (PD) is a chronic progressive disease of the nervous system characterized by the cardinal features of rigidity, bradykinesia, tremor and postural instability. Individuals with Parkinson's disease have difficulties with functional movements associated problems that impact functional movement, which include tremor, bradykinesia, rigidity and impaired postural reflexes. The overall physical effect of Parkinson's disease is a decrease in easy and efficient movement as well as increased risk of falls. Idiopathic Parkinsonism is the most common form affecting approximately 78% of patients.

Parkinson's disease is a very common neurodegenerative disease that affects more than 2% of the population older than 65 years of age. The most common age of onset is 50–60 years and life expectancy is near normal. People with Parkinson's disease suffer the debilitating consequences of the disease over decades.

A suggested key to promote and maintain functions in patients with Parkinson's disease is an active lifestyle that should include regular exercises. This exercise program should emphasize safe and functional movements and ideally include strengthening, flexibility, endurance and balance activities. Numerous research studies have shown that physical therapy interventions positively impact movement problems experienced by Parkinson's disease patients.

As stated earlier, physical therapy can be effective for those with idiopathic Parkinson's disease. Interventions that have been studied include range of motion, stretching, flexibility, strengthening, aerobics for graded exercises, aquatic exercises, passive, active and segmental mobilization techniques, balance training, gait training, functional training, postural control techniques, trunk

stabilization techniques, breathing exercises, proprioceptive neuromuscular facilitation (PNF), rhythmic and verbal cues, and relaxation techniques. These approaches have been studied either individually or in combination with individual or group sessions, with or without supervision, in a laboratory, clinic or home environment.

AIM AND NEED FOR THE STUDY

AIM:

To study the effectiveness of specific exercise and a novel turning program to improve quality of turning in daily life in people with Parkinson's disease.

NEED FOR STUDY:

- * Idiopathic Parkinson disease is the most common form affecting approximately 78% of patients.
- * More than 2% of people older than 65 years of age have Parkinson's disease.
- * The prevalence of the disease is expected to increase substantially in the coming years due to aging of the population.
- * Initially balance training is given to prevent progression of Parkinson's disease to further grade.

OBJECTIVE OF THE STUDY:

- * To reduce risk of falls.
- * To improve the quality of turning in daily life in Parkinson's patients.

METHODOLOGY:

STUDY GROUP: Parkinsons patient

Age: 50–60 yrs

Gender: Both male and female

SELECTION CRITERIA:

A) INCLUSION CRITERIA:

1. Diagnosis of idiopathic Parkinson's disease from neurologist
2. Stable medication stage
3. Hoehn and Yahr stage II, III
4. Self-report of at least one fall in past 12 months

B) EXCLUSION CRITERIA:

1. Unstable medical condition
2. History of other neurological, cardiopulmonary, or orthopaedic disease significantly affecting gait and turning
3. Recent change in medication
4. Inability to stand and walk for 2 minutes without an assistive device

STUDY SETTING: clinical setup

SAMPLE SIZE: 10 samples

STUDY TOOLS:

Falls Efficacy Scale-International (FES-I)

Parkinson's Disease Questionnaire-39 (PDQ-39)

MATERIALS REQUIRED:

- Cones
- Dribbling glasses

STUDY DURATION: 6 weeks

TREATMENT PROTOCOL:

Duration of treatment: 6 weeks

Sessions/week: 3 sessions per week (total 18 sessions)

Duration per session: 30 to 45 minutes

PROCEDURE**PRE-TREATMENT ASSESSMENT:**

1. Falls efficacy scale-international (FES-1)
2. 16 Item questionnaire to assess fear of falling
3. Parkinson's disease questionnaire-39 (PDQ-39)
4. 39 items self-report questionnaire to assess Parkinson's disease specific health related quality in eight domains of quality of life

TREATMENT:**A) SPECIFIC EXERCISE:**

1. Standing on ground composed of different materials and base of support
2. catching throwing a ball, the ring toss game training
3. Forward reaching in different directions
4. squats, steeping up / steeping downing standing position
5. bridging and hip circle activities in supine position

PROGRESSION

Decrease in base of support and increase in the speed of the motion

B) Novel training intervention program:

6. walking with turning at various degrees figure of eight around cones.
7. Axial mobility exercise
 - i. Trunk rotation
 - ii. Pelvic tilts
 - iii. Segmental turning

PROGRESSION:

Progressing from mat, table to floor. Improve speed

8. Clock turns

Lateral stepping over hurdles

PROGRESSION

Decreasing upper extremity support, decreasing visual Input with dribbling glasses, increasing speed, dual task

9. Turning at various angles, navigation around obstacles and narrow spaces

PROGRESSION

Decreasing upper extremity support, decreasing visual Input with dribbling glasses, decreasing cues (visual and verbal)

10. Random call out on turns

Adding cognitive dual task activities inhibition GO-NO-GO

PROGRESSION

Increasing complexity of exercise, increased speed

DATA PRESENTATION**Falls efficacy scale-international (FES-1)**

S.NO	PRE TEST	POST TEST	DIFFERENCE
1	30	40	10
2	26	48	12
3	29	41	12
4	42	55	13
5	48	58	10
6	37	51	14
7	30	43	13
8	41	55	14
9	40	51	11
10	28	39	11

Parkinson's disease questionnaire-39 (PDQ-39)

S.NO	PRE TEST	POST TEST	DIFFERENCE
1	44	60	16
2	54	68	14
3	56	69	13
4	48	65	17
5	49	63	14
6	57	74	17
7	53	69	16
8	54	67	13
9	47	62	15
10	47	74	15

CONCLUSION

From the above study we can conclude that NOVEL turning exercise shows there is an improvement in quality of turning in parkinsons patients day today life.