

# Art du Deplacement (ADD) / Parkour therapy for people with Parkinsons disease (PD)?

Applying an extreme sport into rehabilitation training to increase physical and mental wellbeing

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## Purpose

The purpose of this study was to transfer ADD/Parkour training methods into safe training paradigms for people with PD, and coping strategies for mood management through integrating the ADD therapy via the Esprit Concrete method and neuroprotective exercise protocol (NEP) through neurowerkstatt-training-center.

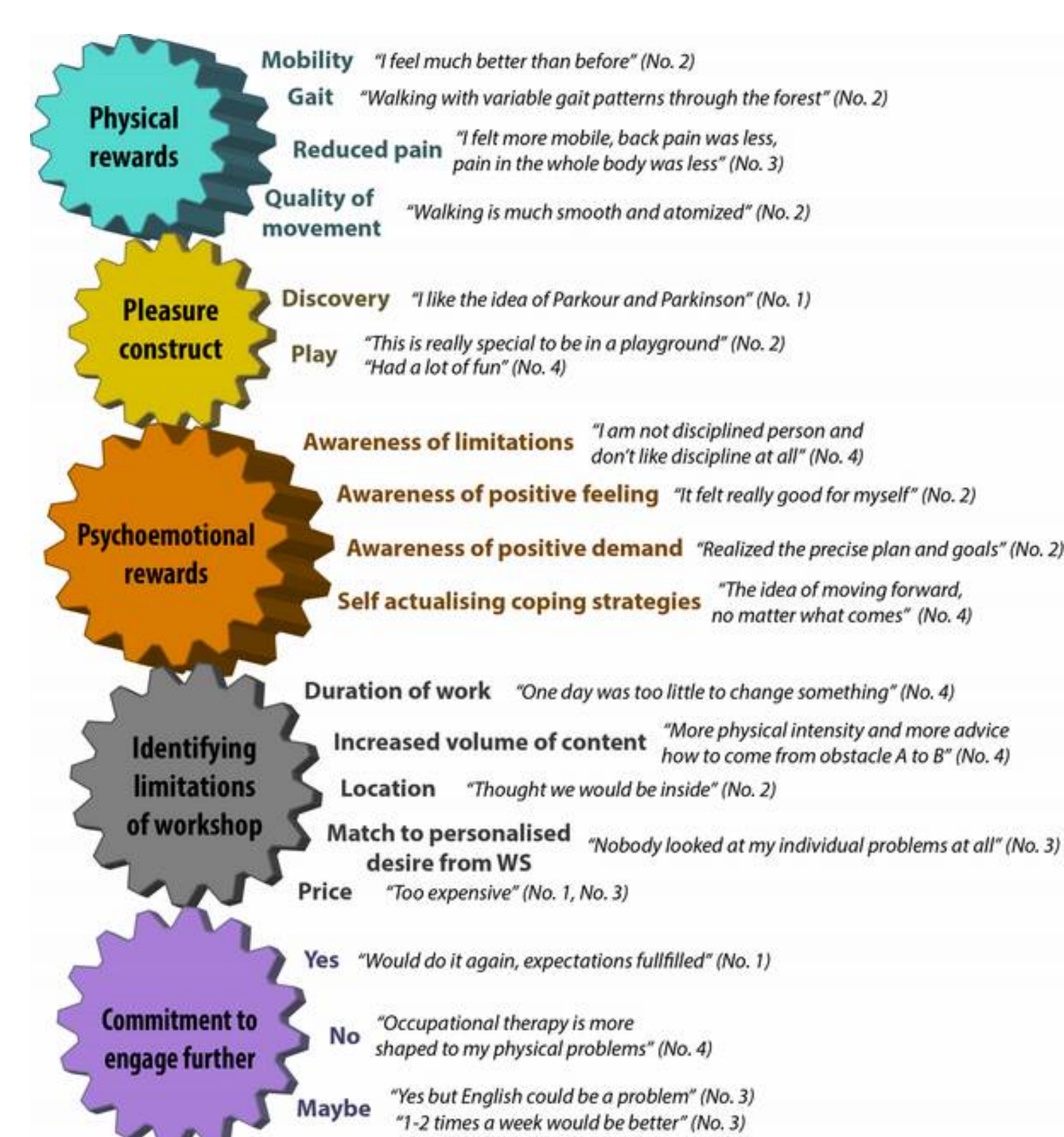
## Introduction

A growing number of PD studies and reviews show, that exercise is beneficial for physical functions like mobility, balance, gait, strength and cardio-respiratory function (e.g. 1,2). Environmental enrichment and intensive physical activity are related to neuroprotective and neurorestorative effects in the PD nervous system (3). Physical exercise rehabilitation programs showed significant positive effects on quality of life in PD patients at mild to moderate stages (4). ADD includes numerous physical tasks of motor learning, that are combined strength and endurance tasks. It improves physical fitness, mental wellbeing and social learning (5,6). ADD can be considered as a safe activity when practiced under expert supervision, combined with emotional wellbeing informed interventions (7).

1 neurowerkstatt (GER)  
2 esprit concrete (ENG)

## Results

The guided qualitative interviews gave varied insights, which are shown in the figure below:



## Parkour / Art du déplacement

Delivered together, we propose that ADD therapy is a potentially useful rehabilitation program that is beneficial in secondary PD symptoms, but also in neuroprotective aspects e.g. enriched environment and motor skill learning, combined with intensive exercise training paradigms. To our knowledge this is the first study that combines ADD therapy as a useful exercise and wellbeing strategy for people with PD worldwide.



## Methods

Qualitative guided interviews were used with the main topics: expectations, emotions and feelings, training and physiological changes, and general aspects explored. Additionally the *Parkinson disease questionnaire* (PDQ39), *Generalized Anxiety Disorder Scale* (GAD-7), *Patient Health Questionnaire* (PHP-9) and *Short-Warwick-Edinburgh Mental-Wellbeing-Scale* (SWEMWBS) were used.

## Subjects

Four persons (3 male/1 female) with PD (Hoehn & Yahr I-III) were included. Age ranged from 53 to 77 years (mean: 62 years).

## Intervention

The program combined physical and psychological wellbeing areas of focus through a one day intensive workshop in which four (45min) training sessions were done. The training sessions were held under the following topics:

- |                                |                   |
|--------------------------------|-------------------|
| (1) Contact and proprioception | (2) Movement Flow |
| (3) Strength and Conditioning  | (4) Fun and Games |

## Discussion

Numerous human and animal RCT-exercise-studies with PD show improvements in mobility, gait and disease symptoms.

Our study supports current laboratory findings in a practical application setting. PD patients reported additional gain by linking exercise with an emotional-psychological approach and focus. Although subjects reported workshop-limitations, these seem to be manageable in further settings. ADD therapy under expert supervision in a small group seems to be safe and feasible.

Limitation of the study is a low methodological quality. The sample was small as preliminary. Possible bias effects of the sample might be motivated through monetary obligations and an intrinsic motivation to choose an expert training program.

## Conclusion

This pilot study preliminarily suggests, that ADD therapy is an exercise possibility for people with mild to moderate PD. It has potential to physically improve symptoms and might optimize disease progression. It also has potential to psychologically improve mental wellbeing. Further research is needed.