



# AOTA Evidence Briefs

## Parkinson's Disease

*\*A product of the American Occupational Therapy Association's Evidence-Based Literature Review Project*

### P #2

## Health education and promotion may improve ADL status and self-efficacy in clients with Parkinson's disease

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Montgomery, E. B., Jr., Lieberman, A., Singh, G., & Fries, J. F. (1994). Patient education and health promotion can be effective in Parkinson's disease: A randomized controlled trial. *American Journal of Medicine*, 97, 429–435.

### Level IA3b

Randomized controlled trial, 20 or more participants per condition, low internal validity, moderate external validity

### Why research this topic?

Research has shown that factors such as exercise, lifestyle, social and spousal support, and self-efficacy affect the outcomes of numerous long-term diseases other than Parkinson's. Research also has demonstrated that health education can influence many of these factors. Neurologists Montgomery and colleagues (1994) hypothesized that a health education and promotion program for patients with Parkinson's disease would slow the rate of progression of symptoms and disability through changes in exercise level, perceived self-efficacy, and frequency of side effects.

### What did the researchers do?

The neurologists recruited participants from persons enrolled in the health promotion program PROPATH, a free educational offering for patients with Parkinson's disease, sponsored by a pharmaceutical company. Contacting 400 consecutive enrollees in the program, they received positive responses from 322 (gender not reported). They randomly assigned the 322 to a treatment or a control group, resulting in totals of 155 and 167 participants, respectively. Of these, 140 and 150, respectively, completed the study. The average age of the treatment group was 68.1 years and of the control group, 70.6 years.

The PROPATH program was administered by mail. The participants in the treatment group completed a one-page questionnaire at the outset of the study and again at 2, 4, and 6 months into the study. From each completed questionnaire the computer generated an individualized letter to the participant reporting his or her progress and making recommendations regarding exercise, diet, compliance with medication, and control of side effects. The letter also contained information about dealing with the problems specifically reported by the participant. Concurrent with the letter, a report went to the participant's physician summarizing the participant's condition, listing the suggestions made to him or her, and offering additional suggestions for the physician's consideration (e.g., reducing medication dosage).

The outcome areas of interest were *activities of daily living (ADL)* (as measured by the Unified Parkinson's Disease Rating Scale [UPDRS]); *perceived self-efficacy* (as measured by a battery of 15 questions); and *exercise* (as reported by the participant). The UPDRS asks patients to report such information as how well they can perform ADL when they are feeling their best and when they are feeling their worst; how severe certain problems (e.g., tremor and difficulty swallowing) are at the patients' best and worst; how much of certain medications (e.g., levodopa, or L-dopa; bromocriptine; selegiline) they take each day; and what side effects they have experienced within the past week.

The neurologists also looked at the cost of the program versus the costs of doctor visits, hospital days, and sick days.

## What did the researchers find?

In terms of changes in scores over the 6 months of the study, differences on 12 of 13 variables favored the treatment group. The participants in the treatment group improved **significantly** (*see Glossary*) on ability to perform ADL at their best and worst, on “amount of L-dopa needed,” and on the presence of side effects, while the participants in the control group worsened significantly. Visits to the physician, hospital stays, and sick days decreased in the treatment group, significantly so for visits to the physicians.

In terms of average scores at the end of the study, differences also favored the treatment group on all but two variables. Significant differences were evident in ability to perform ADL at their worst, in the rate at which their disease was progressing, and in frequency of exercise.

On the self-efficacy measure, the members of the treatment group showed significant improvement in believing that they could control their symptoms, improve the “timed function of daily activities” (a phrase specific to the assessment, meaning that they could improve the amount of time they took to perform ADL), and manage disease problems. The control group showed no significant changes.

## What do the findings mean?

- For therapists and other providers, the study supports the notion that health education and exercise promotion can improve ADL and self-efficacy in clients with Parkinson’s disease.
- This particular program, which combines health education and exercise promotion, not only had a high yield in benefits but operated at a low cost—about \$100 per person per year. Further, the program saved an estimated \$570 per person by one calculation and \$820 per person by another in physician visits, hospital days, and sick days.

## What are the study’s limitations?

Although the intervention was low cost, certain issues raise concerns as to whether the positive outcomes would be replicated with another sample. One issue that may affect the generalizability of the results is the use of self-report measures. Reliability and validity of the measures were not reported, and because the data were collected by mail and there was no direct contact with participants, there was no mechanism to check the accuracy of the collected data. Also, investigators contacted the physicians of participants in the program during the study, which may have introduced bias into the study.

## Glossary

**significance (or significant)**—A statistical term, this refers to the probability that the results obtained in the study are not due to chance, but to some other factor (such as the treatment of interest). A significant result is likely to be generalizable to populations outside the study.

Significance should not be confused with clinical effect. A study can be statistically significant without having a very large clinical effect on the sample. For example, a study that examines the effect of a treatment on a client’s ability to walk may report that the participants in the treatment group were able to walk significantly longer distances than the control group. However, if you read the study you may find that the treatment group was able to walk, on average, 6 feet, whereas the control group was able to walk, on average, 5 feet. Although the outcome may be statistically significant, a clinician may not believe that a 1-foot increase will improve his or her client’s function.

■ Terminology used in this document is based on two systems of classification current at the time the evidence-based literature reviews were completed: *Uniform Terminology for Occupational Therapy Practice—Third Edition* (AOTA, 1994) and *International Classification of Functioning, Disability and Health (ICIDH-2)* (World Health Organization [WHO], 1999). More recently, the *Uniform Terminology* document was replaced by *Occupational Therapy Practice Framework: Domain and Process* (AOTA, 2002), and modifications to *ICIDH-2* were finalized in the *International Classification of Functioning, Disability and Health* (WHO, 2001).

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For more information about the Evidence-Based Literature Review Project, contact the Practice Department at the American Occupational Therapy Association, 301-652-6611, x 2040.

