



# AOTA Evidence Briefs

## Stroke

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

### S #3

## **A leisure rehabilitation program may encourage stroke patients to participate in leisure activities and may improve their mobility and psychological well-being**

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Drummond, A. E. R., & Walker, M. F. (1995). A randomized controlled trial of leisure rehabilitation after stroke. *Clinical Rehabilitation*, *9*, 283–290.

Drummond, A. E. R., & Walker, M. F. (1996). Generalisation of the effects of leisure rehabilitation for stroke patients. *British Journal of Occupational Therapy*, *59*, 330–334.

### **Level IB2a**

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

### **Why research this topic?**

People's involvement in leisure activities decreases after stroke, and this change may diminish their quality of life. Some researchers think that stroke patients' involvement decreases because there is not enough support for them to pursue leisure activities.

### **What did the researchers do?**

Drummond and Walker (1995, 1996), of City Hospital (Nottingham, United Kingdom), hypothesized that a program encouraging leisure activities would help stroke clients resume such pursuits, and they designed a study to test their hypothesis. Sixty-five people participated: 37 men and 28 women. Their average age was 66 years. They all were patients consecutively admitted to the stroke unit in Nottingham between October 1990 and July 1992 who spoke English, had no severe comprehensive problems, had no history of dementia, did not need to be transferred for further medical treatment, had an address in the Nottingham District Health Authority, and were not nursing or rest home residents.

The researchers randomly assigned the participants to a group that received the experimental treatment (leisure rehabilitation group), a group that received conventional occupational therapy treatment (conventional group), or a group that received no treatment (control group). Despite the random assignment, the participants in the leisure rehabilitation group turned out to be much younger than the participants in the other two groups.

Occupational therapists delivered all the services in the participants' homes. The duration of treatment was 6 months. For the first 3 months, occupational therapists provided services once a week; for the last 3 months, once every 2 weeks. All the visits lasted 30 minutes.

For the leisure rehabilitation group, the interventions consisted of treatment such as practice of transfers needed for preferred leisure pursuits; positioning; provision of equipment; adaptations of methods; advice on obtaining financial assistance and transportation; liaisons with specialist organizations; and provision of other assistance, such as referral to voluntary agencies that could provide physical assistance.

For the conventional group, the interventions focused on traditional occupational therapy activities, such as practice of transfers and dressing, and perceptual treatments (e.g., requiring the client to move the arm unaffected by the stroke into space on the affected side in order to accomplish an activity, or using a red anchor line to the left of a project to bring the client's attention into space on the affected side). If the participant was independent in activities of daily living (ADL), the occupational therapist used the visit as a checkup and inquired about problems and progress. Participants received no help or advice encouraging involvement in leisure pursuits.

The outcome areas of interest were *number of leisure activities and amount of time spent engaging in leisure activities* (as measured by the Nottingham Leisure Questionnaire); *ADL* (as measured by the Nottingham Extended ADL Scale); *psychological well-being* (as measured by the Nottingham Health Profile); and *depression* (as measured by the Wakefield Depression Inventory).

### **What did the researchers find?**

The leisure rehabilitation group showed a **significant** (*see Glossary*) increase in leisure scores at both 3 and 6 months after their entrance to the study (which occurred on discharge from the hospital). Adjusting for the age imbalance between this group and the other groups, the researchers still found the increase to be significant. The leisure rehabilitation group also performed significantly better than the other two groups on some items of the ADL scale (the items measuring what the group had practiced) and the health profile (e.g., mobility, leisure, perception of energy).

The **effect sizes** (*see Glossary*) were large. The number of leisure activities and the frequency of engaging in leisure activities were strongly affected by specific practice, versus treatment focused on ADL or no treatment.

### **What do the findings mean?**

For therapists and other providers, the findings suggest that a leisure rehabilitation program may enhance stroke clients' participation in leisure activities. It also may improve their mobility and their psychological well-being. By contrast, conventional treatment may have little effect in achieving such outcomes.

Some therapists and physicians believe that skills transfer to activities that patients have not practiced. These studies show that they do not. Task-specific training is important for improvement.

### **What are the study's limitations?**

One potential limitation that could provide an alternative explanation for the outcome was the younger age of the leisure rehabilitation group compared with the conventional group or the control group. This imbalance occurred accidentally during randomization, but the researchers controlled for it in their analysis of the data.

A limitation not controlled for was that the same therapist delivered the intervention to the leisure rehabilitation group and the conventional group. If the therapist knew the study's hypothesis, he or she might have unintentionally influenced the findings. The assessor, however, was not aware of the group assignments and thus could not have influenced the findings.

## Glossary

**effect size (Cohen's  $r$ )**—An effect size is a measure of clinical significance. It provides information about the magnitude of effect of the treatment. Although related to significance, it is not as influenced by the size of the sample. Therefore, it is possible to have an outcome on which the treatment had a large effect (i.e., the treatment group improved a lot more than the control group) and still have a non-significant result. If the results have a large effect but no significance, this means that this effect may be sample specific and not generalizable outside the study. There are many different types of effect sizes. What is reported here is Cohen's  $r$ . Cohen's  $r$  can be interpreted in a manner similar to a Pearson's correlation coefficient:

<b>Effect size <math>r</math></b>	<b>Size of the effect</b>
<0.10	Negligible
0.10–0.29	Small
0.30–0.49	Medium
>0.50	Large

Cohen, J. (1977). *Statistical Power Analysis for Behavioral Sciences*. New York: Academic Press.

**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 one that 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. However, if you read the study you may find that the treatment group was able to walk, on average, six feet, while the control group was able to walk, on average, five feet. While the outcome may be statistically significant, a clinician may not feel that a one foot increase will make his or her client functional.

■ 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).

This work is based on the evidence-based literature review completed by Hui-ing Ma, ScD, OTR, and Catherine A. Trombly, ScD, OTR/L, FAOTA.

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.



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