



Occupational therapy after stroke: a right not a privilege?



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'A series of trials has shown that treatment by an occupational therapist, who is an expert in stroke care, can reduce activity limitation in people who have had a stroke.'

Stroke is a major health problem and is the third most common cause of death in the UK [101]. It is also the single most common cause of severe disability, and more than 250,000 people live with disabilities caused by it [101]. Once a stroke has occurred, it is accepted that rehabilitation is one of the most effective treatments available [1]. Such is the range of problems that may exist, it is clear that the skills of a multidisciplinary team are needed. Occupational therapists are essential and integral members of this team and use [2]:

'...purposeful activity or interventions designed to achieve functional outcomes which promote health, prevent injury or disability, and which develop, improve, sustain or restore the highest possible level of independence.'

In recent years, occupational therapists have sought to evaluate their clinical practice with people who have had a stroke and to add to the evidence for using or, indeed, excluding particular interventions. The main difficulties with this research have been the problems of designing and conducting rehabilitation trials that are of a high methodological standard. However, this is true for any research evaluating a complex intervention. For example, a particular problem has been defining an intervention carefully enough in order to ensure that therapists in different geographical locations provide the same package of care; for example, how can we be sure that the therapist in one hospital is providing the same treatment as her colleague 100 miles away? It is also difficult to prevent bias in that it is challenging to hide interventions from 'blind' assessors. Another specific problem to research in this field is introducing randomization in a setting where an occupational-therapy service is already established and

where, consequently, neither patients nor therapists are comfortable with the concept of a control group.

However, despite all these challenges, researchers have conducted and published randomized controlled trials. There is now evidence for occupational-therapy interventions; a series of trial has shown that treatment by an occupational therapist, who is an expert in stroke care, can reduce activity limitation in people who have had a stroke [3-7]. Moreover, such interventions may even reduce strain on carers. There is also evidence that people in the community can benefit from occupational therapy. Walker *et al.* recruited people who were not admitted to hospital after their stroke, and showed that those who had an occupational-therapy intervention performed better than a control group at 6-month follow-up on a range of self-care measures [8].

However, one of the remaining problems with research in this field has been the fact that most of the studies, although positive, were small. By contrast, the largest study to date reported essentially negative results [9]. In this study, 466 patients who had a stroke were randomly allocated in five UK centers to receive additional occupational therapy focused on either leisure, on activities of daily living (ADL) or to receive their normal care. In contrast to the findings of the previous smaller trials, neither of the additional occupational-therapy treatments showed a clear beneficial effect on mood, leisure activity or independence in ADL measured at either 6- or 12-month follow-up.

It has been suggested that these results were a consequence of the trial, essentially testing an artificial situation in that therapists were asked to deliver treatments separately, which were more usually combined. Therefore, as therapists found day-to-day implementation difficult, there might have been contamination between the groups. It is also possible that people were withdrawn – or indeed not even entered into the study – by their therapists, who believed they needed normal, routine care (that is, both ADL and leisure interventions). These practical difficulties with protocol adherence could explain the negative results obtained.

Consequently, we decided to conduct a systematic review to ascertain whether occupational therapy targeted towards personal ADL for stroke patients could maintain or restore a level of independence in personal ADL. We knew that the evidence should already be available from the small trials, and this seemed a more sensible option than conducting another large trial. We chose personal ADL, which is a cornerstone of occupational-therapy treatment and can be defined as [10]:

‘...those tasks which all of us undertake every day of our lives in order to maintain our level of care’

This includes such tasks as feeding, dressing, toileting and mobilizing. We sought any randomized, controlled trials that compared an occupational-therapy intervention focused on ADL with no routine input. This review drew on the search strategy developed for the Stroke Group of the Cochrane Collaboration [11]. The actual methodology for our review is described in greater detail elsewhere [12]. However, in brief, one reviewer read the titles of all the references identified in the searches and eliminated inappropriate studies or study designs. The remaining abstracts were selected as appropriate for inclusion by two reviewers who resolved differences of opinion by consensus and independently rated the methodological quality of studies. Data were also obtained from the original trialists.

A total of 14,593 references were identified from the searches. Of these, 14,528 were excluded from the title or abstract, having been deemed inappropriate in content or design, leaving 65 potentially eligible studies for inclusion. Full texts were obtained for these studies, 54 of which were then excluded as they did not fulfil the inclusion criteria (i.e., intervention not delivered by occupational therapists; intervention not focused on personal ADL; two types of occupational therapy compared; study not a randomized controlled trial and insufficient numbers of stroke patients included in trial). Two trials had not been completed at the time of the review.

In total, nine studies were included and contained information on a total of 1258 participants. Personal ADL scores were available for 961 (81%) participants and the pooled result for all trials, combined as a standardized mean difference, was 0.18 (95% CI: 0.04–0.32; $p = 0.01$). Therefore, participants who received occupational therapy after stroke were significantly more independent in

personal ADL than those who received no intervention or usual care. These patients were also less likely to have a poor outcome in terms of mortality, place of discharge and level of disability [13].

‘Participants who received occupational therapy after stroke were significantly more independent in personal activities of daily living than those who received no intervention or usual care.’

Occupational therapy is a complex intervention and, therefore, its effects are difficult to research and measure. We accept that the exact nature of the interventions in each study included in our review probably differed in relation to the types of patient, the expertise of the therapists and the resources available. It is also likely that the interventions in these studies were provided by expert therapists who might not have had the same service pressures as clinical colleagues. Yet despite this, we believe that the evidence demonstrates that occupational therapy after stroke improves outcome in patients with difficulties in personal ADL ability and, moreover, that this benefit is an important one. The questions we should now seek to answer are:

- Which specific interventions are most effective?
- With whom? (i.e., the selection of appropriate patients)
- How much? (i.e., the intensity of treatment sessions)
- For how long? (the duration of the treatment)

The debate now needs to move away from whether focused occupational therapy after stroke is beneficial, to whether it is a right and not a privilege.

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