

The study identified the extent to which members of the National Association of Neurological Occupational Therapists (NANOT) who treated adult stroke patients used evidence-based practice (EBP). A random sample of NANOT members (n = 200) was surveyed by a postal questionnaire on the use of EBP and the results were analysed for the 125 therapists who worked with adult stroke patients.

The principal factor that 'greatly' influenced the choice of intervention of three-quarters of the respondents was working with other therapists, followed by attendance at postgraduate courses; gaining postgraduate qualifications had the least influence. Although over 90% of the respondents considered that they used EBP at some time, the most frequently reported levels of evidence used were custom and practice and expert opinion, which were at the lower end of the hierarchy. Therefore, although the respondents who treated adult stroke patients did use EBP, they did not use the higher levels recommended. The respondents who used the higher levels of evidence were those who were most recently qualified. The factors influencing the use of EBP were the relevance of research to practice, time, lack of therapists' knowledge and lack of support.

# The Use of Evidence-Based Practice by Occupational Therapists who Treat Adult Stroke Patients

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## Introduction

Government publications, *The New NHS: Modern, Dependable, A First Class Service* and *The NHS Plan* (Department of Health 1997, 1998, 2000a), contain exhortations to use evidence-based practice (EBP). Sackett et al (1996, p71) defined EBP as the 'conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients'. Lloyd-Smith (1997) noted that evidence was classified according to a hierarchy, with meta-analysis of randomised controlled trials and randomised controlled trials at the higher levels and with case studies and expert opinion at the lower levels. Ideally, intervention should be based on the higher levels of evidence where these are available.

Within occupational therapy, Alsop (1997), Bannigan (1997), Lloyd-Smith (1997) and Taylor (1997) have advocated the adoption of EBP. This is supported by the College of Occupational Therapists' *Code of Ethics and Professional Conduct for Occupational Therapists* (COT 2000, p13), which states: 'Occupational therapists have a duty to ensure that wherever possible their professional practice is evidence based and consistent with established research findings.' Further emphasis will be placed on EBP by the revision of the Professions Supplementary to Medicine Act 1960 (Craik 1997) and the creation of the Health

Professions Council, which will introduce mechanisms to ensure that all occupational therapists can demonstrate their continuing competence to practise (Department of Health 2000b). The College of Occupational Therapists' *Position Statement on Clinical Governance* (COT 1999) identified EBP as one of a range of quality initiatives; Sealey (1999) reinforced its status as a key component of clinical governance.

Despite the exhortations to use EBP, Humphris et al (2000), in a survey of 66 occupational therapists in seven acute NHS trusts in the South Thames Region of England, noted that while they were motivated to use EBP, there were a number of barriers to its adoption. Dickinson (2000) surmised that although more occupational therapy research was being conducted than previously, barriers to its adoption remained; she challenged service managers to provide suitable environments to nurture the move from custom and practice to research-based interventions.

Occupational therapists are not, however, the only professionals that have not yet fully embraced EBP. Sackley and Lincoln (1996) found that physiotherapists in the United Kingdom chose intervention to suit their stroke patients' needs, their caseload and the time available, rather than on the evidence of its effectiveness. In replicating the study with occupational therapists in the Trent Region,

Walker et al (2000) found similar results and noted that the clinical situation was more influential in choice of approach than personal experience or education; they advised occupational therapists to seek, evaluate and implement the evidence in their treatment of stroke patients.

People with stroke form a large part of the caseload of many occupational therapists, both in specialised units and in more general services. Stroke is the third most common cause of death and the most common cause of adult disability in the United Kingdom (Wolfe et al 1996). Compared with other client groups, there is considerable literature about occupational therapy for people with stroke published not only in occupational therapy journals but also in other journals, for example the *Lancet* (Walker et al 1999) and the *British Medical Journal* (Gilbertson et al 2000).

With the emphasis from the Government and the College of Occupational Therapists on EBP and indications from the literature that occupational therapists had not yet fully adopted its use, it was decided to explore to what extent occupational therapists treating adult stroke patients used EBP. Given that there had probably been more research published about occupational therapy with stroke than other conditions, it was more likely that therapists working in this area could base their interventions on research evidence. Therefore, this study examined the use of EBP with this client group.

## Method

### Participants

The participants were members of the National Association of Neurological Occupational Therapists (NANOT) who worked with or had previously worked with adult stroke patients.

### Data collection

A postal questionnaire was designed based on the literature and two exploratory interviews with occupational therapists who were considered experts in the field of stroke rehabilitation. The questionnaire used closed, scaled questions in a tick box format to gather data about participants, their experience of working with stroke patients, the factors that influenced knowledge of stroke treatment, the frequency with which EBP was used and the factors that influenced its use. A carefully worded covering letter was designed to accompany the questionnaire. It was friendly but professional in tone, explained the rationale of the study and assured confidentiality.

Only those therapists who worked with or had previously worked with people with stroke were required to complete the questionnaire. However, because it was not possible to identify them beforehand, the covering letter thanked those who did not meet the inclusion criteria and asked them to return the uncompleted questionnaire in the stamped addressed envelope provided.

The questionnaire and covering letter were piloted on 20 NANOT committee members and regional contacts, who

were then excluded from the main study. Because of their role in NANOT, it was considered that they would be motivated to support the study by providing informed and constructive criticism. An additional letter encouraged such feedback.

Following minor modifications and approval from the Brunel University Ethics Committee, the questionnaire, covering letter and stamped addressed envelope were distributed to 200 members of NANOT. They were randomly selected by a colleague so that the authors, who had personal knowledge of some of the members, would not bias the selection process. The members gave implied consent by returning the questionnaire. One week after the deadline for return of completed questionnaires, a follow-up letter and another copy of the questionnaire were sent to the members who had not responded.

### Data analysis

Manually coded ordinal data were analysed using Excel and a Kruskal-Wallis one-way analysis of variance was used to determine if there were significant differences between the independent variables. For each Kruskal-Wallis test, the factors were treated as being independent. Therefore, the analysis sought to determine if there were significant differences between the respondents' scores on each of these factors, with the significant differences being reported.

## Results

### Response rate

Of the 200 questionnaires sent, 118 were returned, giving an initial response rate of 59%. This was increased by the follow-up procedure when a further 43 questionnaires were returned, giving a total of 161 returned questionnaires representing an overall response rate of 80.5%. Of those returned, 77.6% (125/161) were from therapists who had previous experience of or were currently working with adult stroke patients. The results are derived from these 125 therapists, representing 62.5% of the original sample.

### Length of time qualified and of working with stroke patients

The length of time the respondents had been qualified ranged from one year to over 21 years, with 40% (50/125) having been qualified for 5 years or less; 31% (39/125) between 6 and 10 years; and the remaining 29% (36/125) for more than 11 years. The median time qualified was 6–10 years.

The duration of time spent working with adult stroke patients ranged from 2.4% (3/125) of respondents who had worked for less than one year to 15.2% (19/125) of respondents who had worked for over 10 years. Eighteen (14.4%) respondents had worked with adult stroke patients between 1 and 2 years; 33.6% (42/125) between 2 and 4 years; 20% (25/125) between 5 and 7 years; and 14.4% (18/125) between 8 and 10 years. The median time working with people with stroke was 2–4 years.

## Factors that influenced respondents' knowledge of treating stroke patients

In relation to six factors, the respondents indicated the degree of influence each had on their knowledge of treating stroke patients. For 76% (95/125) of the respondents, their knowledge was 'greatly' influenced by working with other therapists; for 69% (80/116), the greatest source of influence was by attending postgraduate courses; and 61% (76/125) were 'greatly' influenced by working with patients and using techniques that appeared to work. Reviewing the literature had 'some' influence on 68% (84/123) of the respondents. The factor that had the least influence on the respondents was gaining postgraduate qualifications. This factor had a low response rate, with 45% (56/125) not answering this part of the question and 67% (46/69) considering that it had no influence. These results are displayed in Fig. 1.

To analyse the influence on the therapists' knowledge, each of the factors was treated as an independent variable. Therefore, a Kruskal-Wallis one-way analysis of variance was used to determine if there were significant differences between the factors. Those that were significant are reported. When compared with the time qualified as an occupational therapist, those qualified for more than 16 years were significantly more likely to be influenced by working with patients and using techniques that appeared to work ( $H = 12.87$ ,  $df = 4$ ,  $p = 0.01$ ). Similarly, those who had been working with stroke patients for 8–10 years were significantly more likely than their less experienced colleagues to use interventions with their patients that appeared to work rather than relying on information gained from other sources ( $H = 13.00$ ,  $df = 5$ ,  $p = 0.02$ ).

## Frequency of use of EBP with stroke patients

The respondents were provided with the definition of EBP noted above (Sackett et al 1996) and a brief description of

levels of evidence. They then indicated the frequency with which they used EBP with stroke patients. Eight respondents did not answer. Of the remainder, 6% (7/117) reported that they 'always' used EBP; 50% (58/117) 'usually' used it; 42% (49/117) 'occasionally' used it; and 3% (3/117) 'never' used it.

Then, with reference to examples of evidence, the respondents indicated the frequency with which they used each of them. The evidence used 'daily' by 48% (59/122) of the respondents was custom and practice; 14% (17/122) used expert opinion; and 9% (11/125) used their own case studies. No respondent reported using research papers, the term used to encompass higher levels of evidence, on a daily basis; 9% (11/125) used them on a weekly basis; and 33% (41/125) used them on a monthly basis. These results are displayed in Fig. 2.

Each example was treated as an independent variable and a Kruskal-Wallis one-way analysis of variance was used to determine if there were significant differences between them. The significant results are reported. When compared with time qualified as an occupational therapist, those qualified between 1 and 5 years were more likely than their longer-serving colleagues to use higher levels of evidence, such as the use of research papers ( $H = 12.86$ ,  $df = 4$ ,  $p = 0.01$ ). The same was true in their use of published case studies ( $H = 10.71$ ,  $df = 4$ ,  $p = 0.03$ ). Those who had been qualified longer used custom and practice as their evidence. However, there were no significant differences between the groups in the use of the other levels of evidence.

## Factors that influenced the use of EBP

The respondents indicated the degree of importance of five factors in influencing their use of EBP. For 53% (64/120) of the respondents, relevance to practice was of 'great' importance. Lack of knowledge regarding EBP was of 'great' importance for 38% (46/120), with time seen as a

'great' influence by 31% (37/120). Cost emerged as the factor with least influence, with 32% (38/117) considering it of 'little' importance. These results are displayed in Fig. 3.

Again, the factors were treated as independent variables and a Kruskal-Wallis one-way analysis of variance determined the significant differences between them, which are reported. Comparing the factors that influenced the use of EBP with length of time qualified as an occupational therapist revealed that having enough time was a significant barrier to the use of EBP. Occupational therapists who were qualified for over 21 years and the newly qualified therapists rated time of great importance as a factor ( $H = 11.21$ ,  $df = 4$ ,  $p = 0.02$ ).

Fig. 1. Degree of influence of six factors on 125 occupational therapists' knowledge of treating stroke patients.

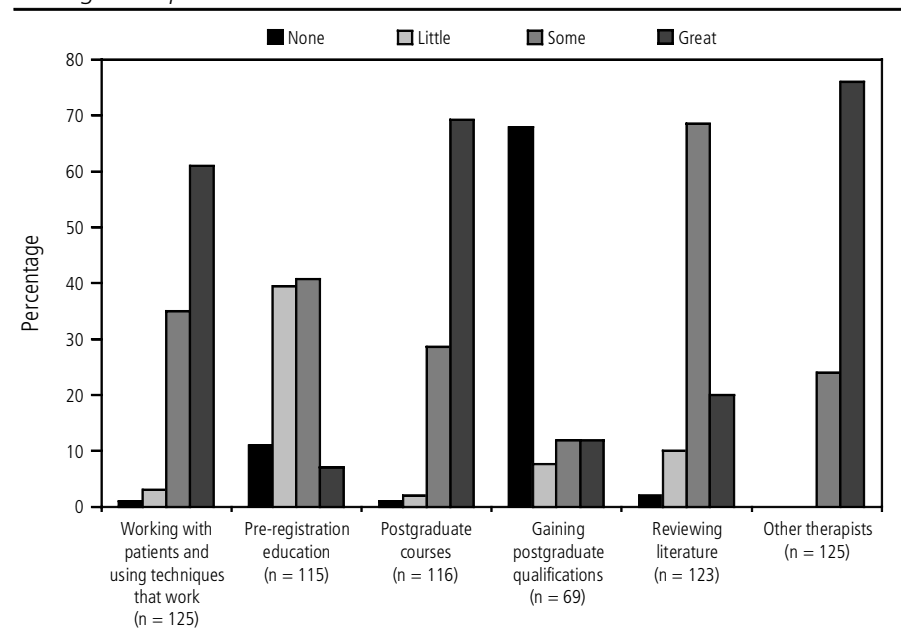


Fig. 2. Frequency with which 125 occupational therapists used types of evidence in relation to their work with adult stroke patients.

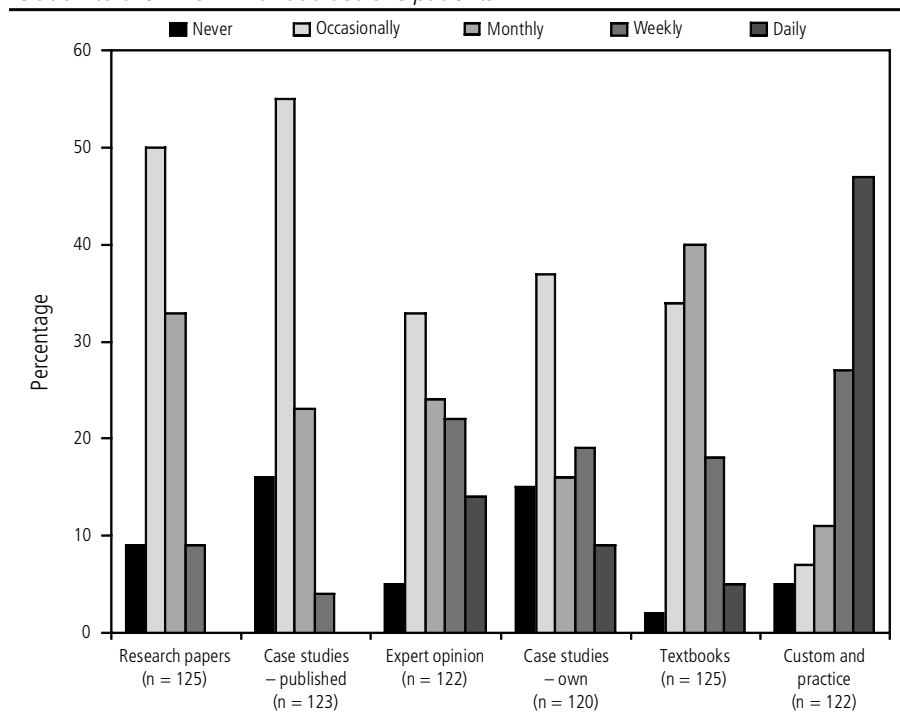
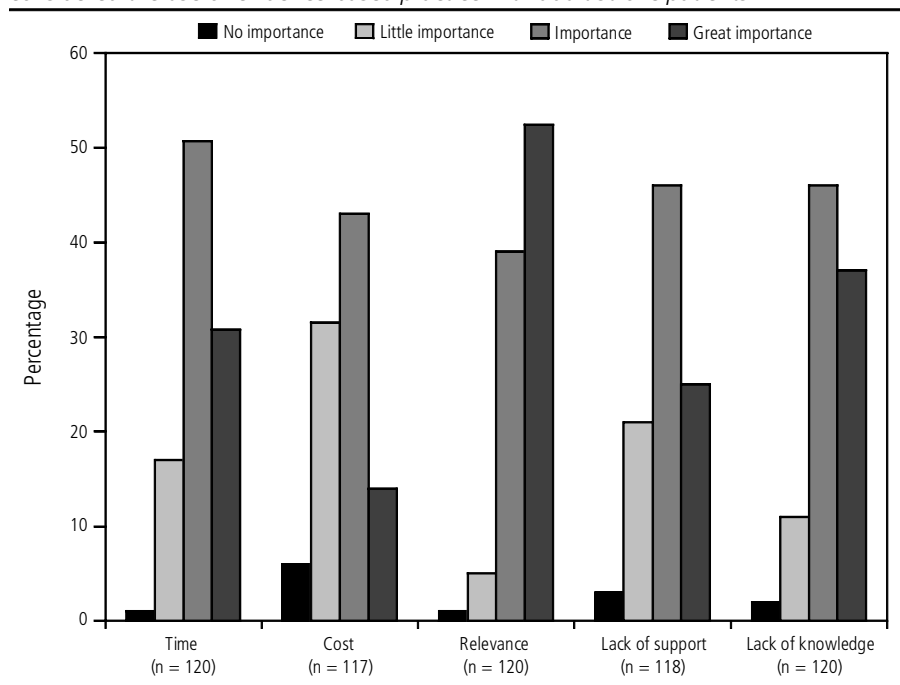


Fig. 3. Degree of importance of five factors when 125 occupational therapists considered the use of evidence-based practice with adult stroke patients.



## Discussion

The final response rate at 62.5% was good for a postal questionnaire.

The occupational therapists in the study were members of NANOT and their interest in the topic may have contributed to the high response rate. They were relatively inexperienced as therapists, with 40% having been qualified for 5 years or less and 50% having worked with adults with stroke for less than 4 years.

The principal factor that 'greatly' influenced the choice of intervention of three-quarters of the respondents was working with other therapists, followed by attendance at postgraduate courses. In contrast, gaining postgraduate qualifications was the option that achieved the lowest overall rating. It appears that most therapists learn about interventions for stroke patients from other therapists and via training courses. This highlights the value of hands-on teaching and supervision for the novice therapist. However, the reliance on learning from experts without higher levels of evidence to underpin it is unlikely to be acceptable in the future. Evidence does exist and therapists have a personal responsibility to base their practice on it, as indicated in the *Code of Ethics* (COT 2000). In addition, occupational therapists may have to widen the scope of their reading because not all relevant research is published in the occupational therapy literature.

Moreover, occupational therapists will be expected to be able to justify their intervention against recognised standards in order to demonstrate their continuing competence to practise. This will be required as part of clinical governance and to maintain registration.

In relation to the frequency with which the respondents used EBP, 56% (65/117) reported that they used it 'always' or 'usually' while 42% (49/117) reported that they used it 'occasionally'. However, the respondents were using differing levels of evidence to support their practice. The more recent graduates were much more likely to use research papers and case studies than were their longer-serving colleagues. While this finding could have been anticipated given the

emphasis on research in degree-level pre-registration education, it is gratifying to see the effect of encouraging students to become critical consumers of research. The more experienced therapists were significantly more likely to use custom and practice to inform their choice of treatment and to use techniques that appeared to work for their patients rather than higher levels of evidence. Again this finding is not unexpected, because these therapists will have developed their clinical reasoning skills. Nevertheless, the use of custom and practice and of expert opinion in preference to the higher levels of evidence is of concern and

could be considered to contravene the *Code of Ethics* (COT 2000).

The study identified barriers to the use of EBP, including the relevance of research to practice, time, lack of therapists' knowledge and lack of support. When considering the factors that affected the use of EBP, time and relevance emerged as important factors. However, the questionnaire did not distinguish between time allowed for study or literature searching and time allocated for intervention evaluation. These results support the findings of Humphris et al (2000) where workload pressures, time limitations and insufficient staff were identified as the three most important factors that discouraged research uptake.

## Limitations

The wording of some of the questions in the questionnaire could have been improved and, on reflection, clearer definition of the levels of evidence to determine the frequency with which they were used would have been helpful.

The study was carried out on members of NANOT, who have a special interest in neurology and therefore may not be representative of all occupational therapists working with stroke. They may have become members because they were experts in the area or they may be novices seeking guidance. Given the length of time qualified and of working with the client group, those who responded to the questionnaire seem more likely to be novices. However, it seems reasonable to assume that if NANOT members with a special interest in neurology have not yet fully adopted EBP then therapists elsewhere are unlikely to have done so.

## Conclusion

The occupational therapists who treated adult stroke patients did use EBP; however, its use would appear to be in its infancy. The therapists recognised its importance to inform intervention and over 90% considered that they were using it, but the level of evidence being used was low on the hierarchy. Although the therapists considered EBP to be important, few appeared equipped with the skills to carry it out, choosing interventions to suit the needs of the patients and their experience (Walker et al 2000) rather than based on evidence. If occupational therapists are to continue to use these interventions then higher levels of evidence will need to be found to justify their use.

The impetus for practitioners to seek and use evidence, and for managers to allow time and training to support them in doing so, is contained in professional guidance, the National Health Service clinical governance agenda and proposed changes to legislation about registration (Department of Health 1998, 2000b, COT 2000). The combined efforts of practitioners, managers and researchers have the potential to create more effective interventions for people with stroke.

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