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## Full title

An audit of dressing practice by occupational therapists in acute stroke settings in England

## Short title

Audit of stroke dressing practice

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## Research ethics approval

Ethical approval for this research was granted by the Division of Rehabilitation & Ageing ethics committee, University of Nottingham (dated 21<sup>st</sup> June 2018).

## Declaration of conflicting interests

The authors confirm that there is no conflict of interest.

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## Keywords

Stroke, dressing practice, clinical audit.

## Abstract

### Introduction:

Dressing independence is commonly affected after stroke, with clinical guidelines recommending that dressing practice should routinely be provided for those with dressing difficulties. The aim of this study was to update the literature on current practice in the treatment of dressing problems in stroke rehabilitation units.

### Method:

A questionnaire survey of occupational therapists experienced in stroke care was sent to 157 stroke units in England.

### Results:

Responses were received from 70 stroke units. Frequency and duration of dressing practice varied substantially between units, with respondents typically providing dressing practice for six to ten patients per week and spending 30 to 45 minutes per treatment session. Only 17 respondents (24.3%) stated that they regularly used standardised assessments of dressing ability. The functional approach was used more widely than the remedial approach. Service priorities, working environment and limitations of time and staffing were reported to influence dressing practice.

### Conclusion:

There is widespread variability in dressing practice. There is a lack of use of standardised dressing assessments, and therapists' rationale for their choice of approach is unclear.

## Introduction

Stroke is one of the main causes of disability in the UK and represents a substantial threat to the health of the population (Intercollegiate Stroke Working Party, 2016b). The impact of stroke can be wide-ranging, and includes impairments in sensory, motor and cognitive abilities, difficulty in performing activities of daily living (ADLs), and reduced participation in valued daily activities (Gillen and Burkhardt, 2004).

Dressing is one essential ADL that is commonly affected after stroke (Walker and Lincoln, 1990; Walker and Lincoln, 1991), and poor rates of improvement are often shown in dressing skills in the early stages of recovery (Morone et al., 2015). As a highly complex skill requiring multiple physical, cognitive and perceptual abilities, there are many aspects of dressing ability that may be impacted following stroke (Edmans et al., 1991; Gillen and Burkhardt, 2004; Walker et al., 2004; Walker and Lincoln, 1990; Walker and Lincoln, 1991). The impairment of such a fundamental life skill can adversely impact on a stroke survivor's dignity, self-esteem, and sense of personal achievement and accomplishment (Walker and Walker, 2001).

It has been shown that the degree of dressing independence at discharge from stroke rehabilitation services is strongly associated with independence in activities of daily living five years after stroke (De Wit et al., 2014). Accordingly, the national clinical guidelines on stroke recommend that stroke survivors with dressing difficulties should routinely receive dressing practice in order to improve their independence (Intercollegiate Stroke Working Party, 2016a), and research evidence has shown that, if delivered by an occupational therapist, this practice can indeed be beneficial (Mew, 2010; Walker et al., 1996).

Previous research has identified two main approaches used by occupational therapists in treating dressing difficulties: namely, the functional approach (Zoltan, 1996) and the remedial approach (Edmans et al., 2000; Fanthome et al., 1995). The functional (or compensatory) approach proposes that time spent repeatedly practising specific functional tasks, using either compensation or adaptation, will facilitate independence in dressing (Fletcher-Smith, 2011). Problem solving is used in this approach, with interventions including components such as putting the affected arm into the sleeve first, crossing the affected leg over the other leg to reach the feet, and energy conservation techniques. The remedial (restorative, or transfer of training) approach proposes that 'drill and practice' exercises, such as using table-top activities, computer exercises, puzzles or scanning tasks, will reduce a person's impairment and dependency (Mew, 2010).

Despite efforts to treat post-stroke dressing difficulties, dressing can take longer to recover than other ADLs, and dressing ability tends to plateau at around six months after stroke (Kong and Lee, 2014). It has been shown that 36% of stroke survivors are still unable to dress independently two years after stroke (Edmans et al., 1991). As well as being affected by residual impairments, it is possible that outcomes may also be influenced by factors such as the content and intensity of dressing practice, the therapist(s) delivering the practice, and/or their reasons for adopting a particular approach, and any further treatment provided to stroke survivors post-discharge.

A 2003 survey of treatment of dressing problems post-stroke (Walker et al., 2003) found that the frequency of dressing practice on stroke units ranged from only two to four times per week. Of the 76 occupational therapists surveyed, only 43% reported using standardised dressing assessments. Ninety-eight per cent reported that they spent time facilitating practice of specific functional skills on a repetitive basis; however, 60% continued to use table-top tasks aimed at targeting particular cognitive impairments. This survey did not, however, gather any information on the intensity of dressing treatment provided post-stroke, nor on further treatments provided for patients following discharge from the acute setting.

Furthermore, there have been no additional studies providing up-to-date data on dressing practice after stroke. Average length of stay in stroke units has also reduced considerably since the survey was conducted in 2003 (Royal College of Physicians, 2011), and thus there is a need to audit practices across stroke units in order to establish a current benchmark and ultimately drive better future care.

The aim of the present study was therefore to carry out a further detailed audit to determine the nature of current delivery of dressing practice in stroke rehabilitation units in England and enable comparison with recommended practice as outlined in national clinical guidelines.

## Method

A pilot questionnaire, intended for completion by occupational therapists in stroke units, was compiled. This was based on a questionnaire used in the previous study by Walker et al. (Walker et al., 2003) and was designed to elicit information on the following:

- How dressing difficulties are assessed
- Who delivers dressing treatment
- The intensity of dressing treatment provided
- The types of treatment strategies routinely used
- The rationale for adopting particular strategies or approaches

Background questions were also included about the occupational therapists completing the questionnaire and the stroke unit on which they worked, e.g. professional grade, length of experience working with people with stroke, approximate caseload receiving dressing practice per week.

As a refinement to the previous questionnaire, questions were added regarding whether occupational therapists routinely provided dressing practice in combination with washing practice, and which specific members of stroke teams were responsible for conducting dressing assessments, developing treatment plans, and providing dressing practice. In addition, a further question was asked regarding dressing treatments provided post-discharge, in order to establish what subsequent treatments are typically available to patients in their own homes. Open-ended questions were included in order to elicit further insights into dressing practice on individual stroke units.

Prior to answering questions on approaches to dressing practice, respondents were provided with a brief description of both the functional and the remedial approaches, with examples of treatments, as follows:

*“The functional approach to dressing practice proposes that time spent repeatedly practising specific functional tasks, using either compensation or adaptation, will facilitate independence in dressing.”*

*“The remedial (transfer of training) approach proposes that ‘drill and practice’ exercises (e.g. using table-top activities or computer exercises) will improve a person’s impairment (e.g. cognitive performance).”*

Examples were also given of the types of treatment strategies typically used in each of these approaches, for example, cueing, which involved ‘providing verbal and physical prompts to dress’, and contextual variety, which involved ‘practising dressing in different types of clothing’. Respondents were asked how often they used each of these approaches and what their rationale was for doing so.

Copies of the pilot questionnaire were initially sent for review to two occupational therapists specialising in stroke rehabilitation, and to two experienced stroke researchers. The content of the questionnaire was subsequently modified based on the feedback obtained.

An advertisement describing the study was circulated by email to members of the Royal College of Occupational Therapists Specialist Section for Neurological Practice, prior to circulation of the final questionnaire. Therapists were encouraged to participate and were informed that questionnaires would be sent out by post to stroke units imminently.

The target population comprised all 157 stroke units in England, as listed in the Royal College of Physicians National Sentinel Stroke Audit 2016 (Intercollegiate Stroke Working Party, 2016b). Questionnaires were addressed to the 'Lead Occupational Therapist' for each unit. An information sheet detailing the purpose of the study was enclosed with each questionnaire, along with a self-addressed stamped envelope for its return. In order to reduce burden, we requested only one response from each unit, although staff were advised that they may consult with other occupational therapists on their unit as needed.

Questionnaires were individually coded in order to collect information on the geographical distribution of returned questionnaires, as well as to identify non-returners. Respondents were asked to complete and return questionnaires within three weeks. After this time, telephone calls were made to all stroke units that had not responded. Advice or assistance was offered with completing questionnaires, and, where necessary, further copies of the questionnaire were sent out. It was made clear at each stage that participation in the study was entirely voluntary. Consent on the part of respondents was deemed to be implicit based on completion and return of questionnaires.

All data collected were coded and analysed using IBM SPSS Statistics for Windows, version 24.0, and were double-checked by a second researcher in order to ensure accuracy.

Free-text data, relating to post-stroke impairments cited as impacting on dressing ability, were analysed using template analysis. A preliminary coding template was developed to summarise impairments identified, and new categories were subsequently added to this as necessary as coding progressed. Frequencies of listed impairments were calculated, and the most common categories of impairments were identified.

Further data, relating to open-ended questions regarding dressing practice on individual stroke units, were analysed using thematic analysis (Braun and Clarke, 2006). Emergent topics were identified as analysis progressed, and these were further categorised in relation to broader overarching themes. Illustrative quotes relating to each of these themes were selected, representing responses from a range of respondents.

Ethical approval for the study was granted by the local university ethics committee (dated June 2018).

## Results

Questionnaires were posted on 10<sup>th</sup> July 2018, and the response period was open until 6<sup>th</sup> August 2018. Twenty-one questionnaires were received after this cut-off date and were included in the final analyses.

Responses were received from a total of 70 out of a possible 157 stroke units, representing an overall response rate of 44.6%. Not all respondents answered all of the questions, and some questions provided the opportunity for multiple different answers. The characteristics of respondents are shown in Table 1.

Respondents were from all geographical areas of England, with the largest responses being from the North West (n=14 (20.0%)), South West (n=9 (12.9%)) and London (n=9 (12.9%)). The greatest proportions of respondents were Band 7 occupational therapists (n=42 (60.0%)), followed by Band 6 occupational therapists (n=18 (25.7%)). (Note that newly qualified occupational therapists begin working in the NHS at Band 5 level, with more specialist occupational therapists progressing to Bands 6 and 7 and consultant occupational therapists working at Band 8).

Respondents had worked in the field of stroke for between 6 months and 30 years, with the mean duration of experience being 10.06 (SD 7.01) years.

[Table 1]

Details regarding delivery of dressing practice on stroke units are shown in Table 2.

Therapists most often reported providing dressing practice for between six and ten patients per unit per week (n=33 (47.1%)), although this was sometimes as few as one patient or as many as 40 patients per week.

There was wide variation in the frequency of dressing practice provided in stroke units. Fifteen units (21.4%) stated that patients with dressing difficulties were treated every day, whereas most units (n=55 (78.6%)) did not deliver dressing treatment on a daily basis. Therapists most often provided dressing practice on no more than four days per week (n=47 (67.2%)), but this could be as little as once per week. Some units reported that the frequency of dressing practice depended on the goals and needs of patients, and thus did not provide an exact figure for frequency of treatment.

Likewise, there was wide variation in the typical duration of each dressing treatment session. Therapists frequently spent 30 to 45 minutes on a session (n=26 (37.1%)), but this could be as little as 10 minutes or as much as 75 minutes per session.

Respondents were asked which staff members were responsible for conducting dressing assessments and delivering dressing treatment on their stroke unit. Dressing assessments were reported to be conducted by occupational therapists on all units (n=70 (100%)), and in some cases were also conducted by rehabilitation assistants (n=31 (44.3%)). On one unit it was reported that nursing staff or health care assistants sometimes carried out dressing assessments.

Dressing treatment plans were developed by occupational therapists on all 70 stroke units, and in a small number of cases were also developed by rehabilitation assistants (n=4 (5.7%)). Dressing practice was provided by a combination of rehabilitation assistants (including 'therapy assistants', 'occupational therapy assistants' and 'occupational therapy technicians') (n=67 (95.7%)), occupational therapists (n=57 (81.4%)), and nursing staff or health care assistants (n=21 (30.0%)).

Fifty-six respondents (80.0%) stated that dressing practice was combined with washing practice on their unit, and 14 (20.0%) said that they 'sometimes' combined dressing and washing practice.

[Table 2]

## Clinical questions

### *Use of standardised assessments*

Only 17 respondents (24.3%) stated that they regularly used standardised assessments, or components of standardised assessments, when assessing dressing ability. The most commonly used standardised assessments were the Nottingham Stroke Dressing Assessment (NSDA) (Walker and Lincoln, 1990) and the Functional Independence Measure and Functional Assessment Measure (Turner-Stokes et al., 1999) (n=4 (5.7%) in each case). Other assessments included the Structured Observational Test of Function (Laver-Fawcett and Marrison, 2016) (n=3 (4.3%)), Chedoke (Gowland et al., 1993) (n=2 (2.9%)), and Edmans ADL Index (Edmans and Webster, 1997) (n=2 (2.9%)).

### *Impairments impacting on dressing ability*

Respondents were asked to indicate in 'free text' responses what impairments they thought might affect a person's dressing ability after stroke. The responses were categorised as follows, according to the broad domains into which the impairments fell:

#### **Cognitive impairments, e.g.:**

- Information processing
- Concentration, attention, neglect/visual inattention
- Memory/recall; dementia
- Agnosia
- Orientation
- Executive function (planning, organisation, problem solving/decision making, sequencing, initiation, perseveration)
- Insight/awareness

#### **Physical/motor impairments, e.g.:**

- Mobility
- Strength/power/control (limb/trunk/core/global)
- Hemiparesis, hemiplegia
- Stability (core/proximal)
- Co-ordination/dexterity; dyspraxia/apraxia
- Tone - spasticity; hypertonicity; hypotonicity
- Range of movement
- Ataxia
- Balance (sitting/standing)
- Dizziness
- Postural alignment
- Involuntary movement/movement disorders

#### **Sensory/perceptual impairments, e.g.:**

- Sensation
- Proprioception
- Spatial perception - distance/depth; stereognosis
- Visual processing – visual acuity, visual field, diplopia; visual discrimination (e.g. figure/ground, contrast sensitivity)
- Oculomotor control; tracking; hemianopia; diplopia

#### **Behavioural/emotional factors, e.g.:**

- Mood/affect, depression, anxiety
- Fatigue
- Motivation/engagement



- Impulsivity
- Confidence/fear

**Language/communication impairments, e.g.:**

- Aphasia

**‘Other’ factors, e.g.:**

- Health/medical; co-morbidities
- Pain
- Alcohol/drug use
- Incontinence

The most frequently reported impairments were cognitive impairments (cited 275 times), followed by motor/physical impairments (cited 247 times), and sensory/perceptual impairments (cited 160 times). Behavioural/emotional factors were cited much less frequently (51 times), as were language/communication impairments (10 times), and ‘other’ factors (9 times). (*NB Individual therapists frequently cited more than one example of an impairment in each category, and therefore some of these totals are greater than the total number of participants*).

*Approaches to dressing practice*

Respondents were asked to indicate what treatment approaches they specifically used in dressing practice to address cognitive or perceptual difficulties. The frequency with which different types of approaches were cited is shown in Table 3.

The most frequently reported strategies were errorless learning (n=39 (55.7%)) and chaining (n=33 (47.1%)), followed by repetition/repetitive practice (n=29 (41.4%)) and cueing/prompting (n=26 (37.1%)).

[Table 3]

*Functional approach*

Twenty-nine respondents (41.4%) stated that they used the functional approach ‘in most cases’, and 24 respondents (34.3%) stated that they ‘always’ used this approach. Only one respondent (1.4%) stated that they ‘rarely’ or ‘never’ used a functional approach.

The most commonly-cited reasons for adopting the functional approach were that it was felt to be ‘useful with apraxia’ (n=60 (85.7%)), ‘useful with memory problems’ (n=60 (85.7%)), ‘useful with perceptual problems’ (n=58 (82.9%)), or that it ‘facilitates better recovery through the process of neuroplasticity’ (n=53 (75.7%)).

Twenty-one respondents (30.0%) stated that they believed that the functional approach enables a patient to generalize the skills that they have learned to other activities, and a further 44 (62.9%) believed that it ‘sometimes’ did so. Only three staff members (4.3%) did *not* believe that the functional approach enables a patient to generalize the skills they have learned to other activities.

Respondents were asked how often they used specific techniques based on the functional approach during dressing practice. Responses are shown in Figure 1. The functional strategies most often used ‘in most cases’ were cueing, adapting the environment, and awareness strategies. Cueing strategies were used by 65 (92.9%) stroke units ‘in most cases’; environmental adaptation was used by 56 (80.0%) stroke units ‘in most cases’, and by a further 12 (17.1%) stroke units ‘in about half of cases’; awareness strategies were used

by 41 (58.6%) stroke units 'in most cases', and by a further 13 (18.6%) stroke units 'in about half of cases'.

[Figure 1]

### Remedial approach

Only six respondents (8.6%) stated that they 'always' used a remedial approach. Nineteen respondents (27.2%) stated that they 'rarely' or 'never' used this approach, and 16 respondents (22.9%) stated that they only used this approach 'in about a quarter of cases'.

The most commonly-cited reasons for adopting the remedial approach were that it 'facilitates normal movement' (n=39 (55.7%)), 'improves quality of movement' (n=39 (55.7%)), is 'useful with perceptual problems' (n=37 (52.9%)), or is 'useful with sensory impairment' (n=37 (52.9%)).

Fifteen respondents (21.4%) believed that the remedial approach enables a patient to generalize the skills they have learned to other activities, and a further 45 (64.3%) believed that it 'sometimes' did so. Ten occupational therapists (14.3%) did *not* believe that the remedial approach enables a patient to generalize the skills they have learned to other activities.

Respondents were asked how often they used specific techniques based on the remedial approach during dressing practice. Responses are shown in Figure 2. The most commonly used remedial strategies were errorless learning, sensory input, and table-top activities (e.g. games, sequencing cards, block designs, pen-and-paper tasks).

Errorless learning was used by 35 (50.0%) stroke units 'in most cases', and by a further 15 (21.4%) stroke units 'in about half of cases'. Sensory input was used by 30 (42.9%) stroke units 'in most cases', and by a further 20 (28.6%) stroke units 'in about half of cases'. Table-top activities were used by 26 (37.1%) stroke units 'in most cases', and by a further 23 (32.9%) stroke units 'in about half of cases'.

[Figure 2]

### Dressing treatment post-discharge

Respondents were asked whether patients with residual dressing difficulties were typically discharged to further services with a dressing treatment plan. Fifty-nine stroke units (84.3%) reported that these patients received further dressing treatment from stroke Early Supported Discharge (ESD) teams, and 38 units (54.3%) reported that patients received further treatment from community stroke teams. A further 15 (21.4%) stroke units reported that patients received treatments from 'other' services, typically general community therapy/reablement teams.

### Further responses relating to dressing practice on stroke units

Participants were asked, "Are there any other things you would like to tell us about dressing practice on your unit?" Space was provided for free-text responses. The responses fell broadly into four main areas, as follows:

### **Time, staffing and environmental limitations**

A number of responses referred to limitations of time, staffing, and/or the environment in which therapists were required to work, for example:

*“We are limited by the ward environment and routine.”*

Several staff members reported that the physical environment in which they conducted dressing practice was far from ideal, and that time pressures meant that they often needed to incorporate washing and dressing assessments and practice together.

Some stroke units did not have sufficient staff to facilitate regular dressing practice, and the pressures placed on acute unit staff meant that it could be difficult to involve nursing staff and healthcare assistants in programmes to enable patients.

### **Patients' own abilities and priorities**

Several occupational therapists pointed out that dressing practice depended on patients' abilities prior to their stroke, as well as patients' own priorities identified during patient-centred goal setting exercises. Some stated that dressing may not be as important to the patient as other abilities, for example:

*“Often patients don't want to work on dressing in hospital due to higher priorities... Washing and dressing appear to be more important once they understand the impact of not being independent with this in the community.”*

### **Availability of patients' own clothing**

A number of occupational therapists reported that dressing practice was often difficult to carry out due to lack of availability of patients' own clothing, and the fact that many patients routinely wear hospital regulation nightclothes.

Several staff members mentioned that they had supported a recent widespread campaign to 'End PJ Paralysis', which aimed to get patients up, dressed and moving, for example:

*“We try to encourage patients in the Acute Stroke Unit to wear their own clothes - not only for rehab purposes but also psychological/wellbeing purposes to feel a sense of self-identify rather than the 'patient role'.”*

### **Priorities prior to discharge**

A considerable number of respondents noted that, due to competing demands, dressing practice was often not a service priority in an acute environment, and that, by necessity, other abilities tend to take precedence. For example:

*“In the acute environment the focus is on the skills essential for discharge... We wouldn't prioritise dressing as there would be higher priorities to focus on to get them home first - i.e. transferring safely, feeding, toileting.”*

Short length of stay and the pressure for patient discharge was often mentioned, and it was apparent that dressing was often perceived to be addressed later by community-based teams. For example:

*“The patients most suitable for dressing practice are taken quickly by ESD, so we have little time to focus on dressing.”*

## Discussion

### Key findings

The frequency and duration of episodes of dressing practice varied substantially across different stroke units. The majority of units did not provide dressing treatment on more than four days per week. Although some therapists reported that the frequency and duration of dressing practice was dependent on the goals and needs of individual patients, the extent of the variation between units suggests that this might be more closely related to the organisational practices of individual stroke units. The analysis of free-text responses suggests that dressing is frequently not a priority for both patients and services. The medium- to longer-term effects of this on dressing and functional ability are, however, unclear. Some stroke units evidently provide relatively low levels of treatment, with therapists believing that this will be addressed later by community teams. However, the extent to which dressing practice is delivered by community stroke teams is not known.

Overall, the functional approach was used more widely than the remedial approach, and more respondents stated that they believed the skills gained through the functional approach, as compared with the remedial approach, could be generalised to activities other than dressing ability. Occupational therapists were more divided as to whether the skills gained through the remedial approach could be generalised to other activities, which raises additional questions as to how therapists decide which approach to use, in which circumstances, and with which patients.

The top three reasons for adopting the functional approach were that it is '*useful with apraxia*', '*useful with memory problems*' and '*useful with perceptual problems*', and these were identical to the reasons given for the choice of the functional approach in the 2003 survey of dressing practice (Walker et al., 2003). Likewise, two of the top three reasons for adopting the remedial approach (i.e. that it '*improves quality of movement*' and is '*useful with perceptual problems*') were also chosen by therapists in 2003. There is also a great deal of overlap between reasons given for using the functional and remedial approaches, particularly in relation to patients with perceptual problems. Therapists reported that both approaches were useful for patients with perceptual problems, and it is thus unclear which approaches might be indicated in which particular circumstances. Our questionnaire provided limited options for free-text responses and it is not possible to determine therapists' reasoning around these decisions; however, this is an important area for further investigation.

Only 24% of respondents reported using standardised assessments to evaluate dressing performance, and there was little consistency in the measures chosen. This represented a decrease from the 43% of therapists who reported using standardised assessments in the previous (2003) survey, in which a quarter used the Rivermead Perceptual Assessment Battery – a tool which was used by none of the respondents in this survey. This suggests that there is a reduction in both the overall use of standardised assessments and in the consistency of choice of measures. This might relate to time and staffing pressures, or might simply reflect that less dressing practice takes place overall than in 2003.

### Strengths and limitations of this study

A strength of this study is that we sampled all of the 157 stroke units in England listed in the Royal College of Physicians National Sentinel Stroke Audit 2016, a resource that was not available at the time of the previous survey. This allowed us to achieve a more comprehensive sample. In addition, a number of questions were added to the survey in order to elicit further insights into dressing practice.

The chief limitation of this study is the low response rate – a common problem in postal surveys of healthcare professionals, which may threaten study validity (Cook et al., 2009). The length of the questionnaire may have prevented some therapists from completing it, since there are many competing demands on therapists' time and their workloads are often too heavy to allow them to spend time on activities such as completing questionnaires (Drummond et al., 2012). Whilst it may have been useful to obtain information on non-responders to explore their reasons for this, in practice it proved very difficult to contact therapists by telephone owing to their clinical commitments.

Another limitation was that, owing to time constraints, the study only surveyed stroke units in England. Future studies would ideally include stroke units in Scotland, Wales and Northern Ireland in order to highlight any differences in practice in different areas of the UK.

### Comparison with previous studies

Overall, cognitive impairments were the category of impairment most commonly cited as affecting dressing ability, and this is consistent with studies that have demonstrated a correlation between performance on neuropsychological tests and dressing/ADL ability (Walker and Lincoln, 1991).

The fact that the functional approach was used in dressing practice more widely than the remedial approach is consistent with the controversial nature of the literature regarding the appropriateness of the remedial approach and its usefulness in generalising to dressing skills and other functional tasks (Edmans et al., 2000). We found particular differences in therapists' opinions on whether the skills from the remedial approach would transfer to other areas, a finding which is also consistent with the wider literature on the appropriateness of this approach.

Notably, although one of the possible reasons to cite for the choice of either the functional or the remedial approach was that '*research evidence supports this approach*', only around one-third of respondents selected this as the basis of their choice (35.3% for the functional approach and 29.4% for the remedial approach). Pollock et al. (Pollock et al., 2000) previously explored such barriers to evidence-based practice as perceived by stroke healthcare professionals, and found that, while over 92% thought that there was a need to keep up to date with research findings, only a small minority actually felt that they had time to do this. There was also a reported lack of confidence in therapists' own ability to read and understand the stroke research literature, and over two-thirds of those who took part in the study identified a need for further training in this area. Similarly, Döpp et al. (Dopp et al., 2012) conducted a survey of the barriers to the use of evidence-based practice among Dutch OTs. The key barriers cited were the attitudes of therapists (in that most therapists felt that too much effort was required to utilise evidence-based practice), and the perception that it was too difficult for therapists to evaluate the quality of evidence.

### Implications for policy and future research

The reasons for the lack of use of standardised assessments of dressing ability should be further explored, not least because a lack of standardised information on patients' dressing performance can present problems when patients are discharged from hospital and referred to further rehabilitation services (Connell et al., 2014). A robust, valid and reliable standardised dressing assessment is already available in the form of the NSDA (Walker and Lincoln, 1990), and this measure has been found both to be sensitive to change in the patient's dressing performance (Walker et al., 1996) and to assist in the diagnosis of cognitive impairments affecting dressing ability (Fletcher-Smith et al., 2010). Challenges experienced by ESD teams in the post-acute stage, such as a lack of data-sharing regarding assessments carried out in hospital (Chouliara et al., 2014), underscore the importance of the use of such standardised assessments in acute stroke care.

Regarding the provision of further treatment post-discharge, continuing patients' rehabilitation following the acute stage is clearly of great importance, especially given that most recovery occurs within the first six months after stroke (Chen et al., 2015). The need for this is further reinforced by the fact that the average length of stay in stroke units has reduced in recent years, to only around 20 days (Royal College of Physicians, 2011).

The results of this study have illuminated the nature of the current delivery of dressing practice and provided relevant benchmark data. This will help inform the planning of future trials in this area and ultimately inform delivery of evidence-based care.

## Conclusion

In this clinical audit study we reported the nature of current delivery of dressing practice as delivered in stroke units in England.

The frequency and duration of episodes of dressing practice, and the rationale informing its delivery, varied substantially across stroke units. Service priorities, working environment and limitations of time and staffing were reported to influence dressing practice.

Whilst the functional approach was used more widely than the remedial approach, few respondents reported using standardised assessments to evaluate dressing performance. Consistency in the use of such standardised approaches is needed if dressing skills are to be properly addressed.

A major limitation of this study was the low response rate, which may limit the generalisability of the findings. The findings, however, give an up-to-date overview of how dressing problems after stroke are currently assessed and managed in England.

## Key findings

- Both frequency and content of dressing practice varied substantially.
- The functional approach to dressing practice was used more widely than the remedial approach.
- Few respondents reported using standardised assessments to evaluate dressing performance.
- Limitations of time, staffing and service priorities influence dressing practice.

## What the study has added

This study provides up-to-date data regarding current practice in the assessment and treatment of dressing problems in acute stroke units in England.

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Table 1: Characteristics of respondents

<b>Geographical area in which worked</b>		
	<b>n</b>	<b>%</b>
North West	14	20.0
South West	9	12.9
London	9	12.9
East Midlands	7	10.0
East of England	6	8.6
Kent, Surrey & Sussex	6	8.6
West Midlands	5	7.1
Yorkshire and the Humber	5	7.1
Wessex	4	5.7
North East	3	4.3
Thames Valley	2	2.9
<b>Professional grade of respondent</b>		
	<b>n</b>	<b>%</b>
Band 4	1	1.4
Band 5	2	2.9
Band 6	18	25.7
Band 7	42	60.0
Band 8a	5	7.1
<i>Response missing</i>	2	2.9
<b>Total length of time respondent worked with stroke patients</b>		
Mean (S.D.)	10.06 (7.01) years	
Range	0.5 - 30 years	
	<b>n</b>	<b>%</b>
	n	%
<5 years	18	25.7
5 – 10 years	26	37.1
>10 years	26	37.1

Table 2: Delivery of dressing practice on stroke units

<b>Estimated numbers of patients receiving dressing practice each week</b>		
	<b>n</b>	<b>%</b>
1-5	10	14.3
6-10	33	47.1
11-20	18	25.7
>20	7	10.0
<i>Response missing</i>	2	2.9
<b>Estimated number of days per week on which patients receive dressing treatment</b>		
	<b>n</b>	<b>%</b>
Up to twice per week	17	24.3
Up to 4 times per week	30	42.9
≥ 5 times per week	17	24.3
<i>Response missing</i>	6	8.6
<b>Estimated duration of each dressing treatment session</b>		
	<b>n</b>	<b>%</b>
10 to 30 minutes	23	32.9
31 to 45 minutes	26	37.1
> 45 minutes	21	30.0
<b>Staff members responsible for conducting dressing assessments</b>		
	<b>n</b>	<b>%</b>
Occupational Therapists	70	100
Rehabilitation Assistant	31	44.3
Nurse / Healthcare Assistant	1	1.4
<b>Staff members responsible for developing dressing treatment plans</b>		
	<b>n</b>	<b>%</b>
Occupational Therapists	70	100
Rehabilitation Assistant	4	5.7
Nurse / Healthcare Assistant	0	0.0
<b>Staff members responsible for providing dressing practice</b>		
	<b>n</b>	<b>%</b>
Occupational Therapists	57	81.4
Rehabilitation Assistant	67	95.7
Nurse / Healthcare Assistant	21	30.0

*Table 3: Approaches used in dressing practice to address cognitive or perceptual difficulties*

	<b>n</b>	<b>%</b>
<b>Errorless learning</b>	39	55.7
<b>Chaining (backward/forward)</b>	33	47.1
<b>Repetition/repetitive practice</b>	29	41.4
<b>Cueing/prompting (verbal, visual, physical/tactile)</b>	26	37.1
<b>Context/environment</b>	23	32.9
<b>Graded task approach</b>	19	27.1
<b>Facilitation/hand over hand</b>	17	24.3
<b>Scanning</b>	10	14.3
<b>Education/demonstration/modelling</b>	10	14.3
<b>Mirroring/ visual feedback</b>	5	7.1
<b>Checklists</b>	3	4.3

Figure 1: Frequency of use of specific functional techniques in dressing practice

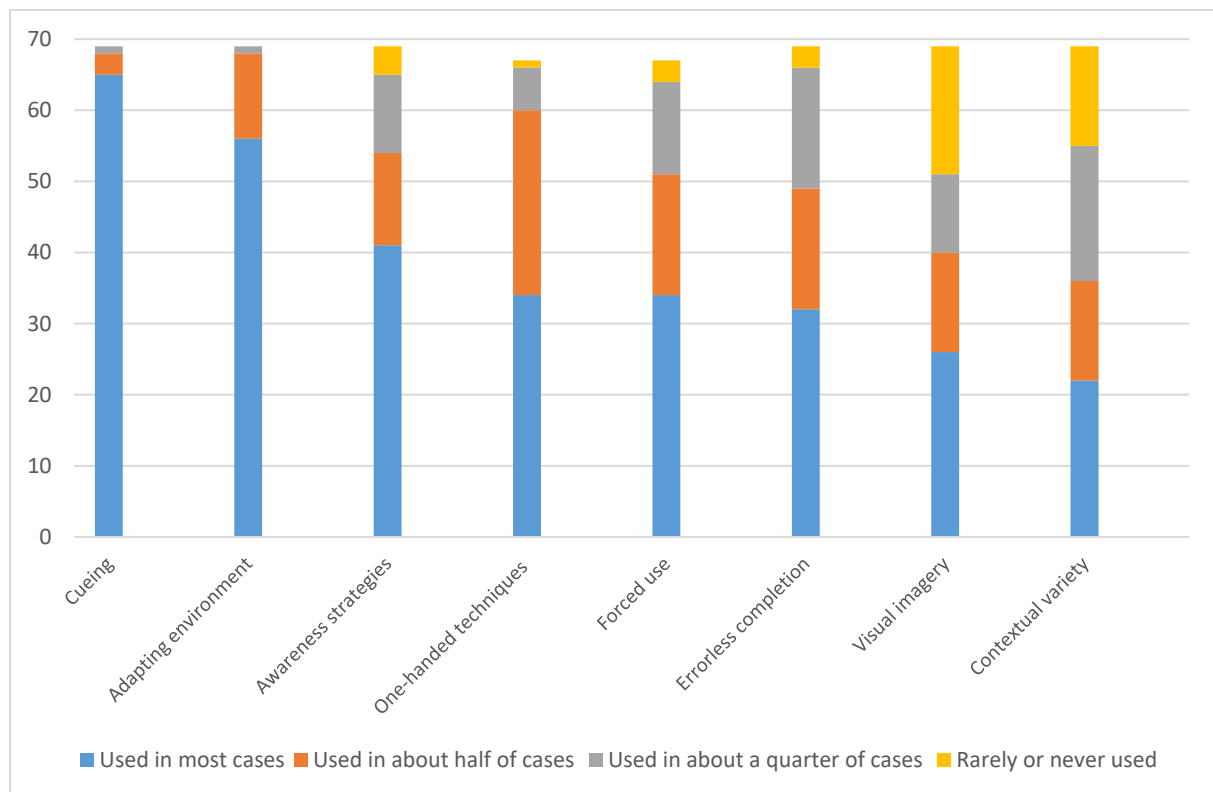


Figure 2: Frequency of use of specific remedial techniques in dressing practice

