


BMJ Open Why do some people who had a stroke not receive the recommended 45 min of occupational therapy and physiotherapy? A Delphi study

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ABSTRACT

Objectives To gain a consensus among therapists for reasons why a person who had a stroke may not receive the Royal College of Physicians' recommended minimum of 45 min of daily therapy.

Design Three-round remote e-Delphi study.

Setting National study, based in the UK.

Participants Occupational therapists and physiotherapists with experience of delivering therapy after stroke and awareness of the 45-minute guideline.

Results Forty-five therapists consented to participate in the study. Thirty-five (78%) completed round one, 29 of 35 (83%) completed round 2 and 26 of 29 (90%) completed round three. A consensus (75%) was reached for 32 statements. Reasons why a person may not receive 45 min were related to the suitability of the guideline for the individual (based on factors like therapy tolerance or medical status) or the capability of the service to provide the intervention. In addition to the statements for which there was a consensus, 32 concepts did not reach a consensus. Specifically, there was a lack of consensus concerning the suitability of the guideline for people receiving Early Supported Discharge (ESD) services and a lack of agreement about whether people who need more than 45 min of therapy actually receive it.

Conclusion Some people do not receive 45 min of therapy as they are considered unsuitable for it and some do not receive it due to services' inability to provide it. It is unclear which reasons for guideline non-achievement are most common. Future research should focus on why the guideline is not achieved in ESD, and why people who require more than 45 min may not receive it. This could contribute to practical guidance for therapists to optimise therapy delivery for people after stroke.

INTRODUCTION

Following a stroke, people participate in occupational therapy and physiotherapy as part of inpatient¹ and Early Supported Discharge (ESD) services.² These therapies are reported to be appropriate for 80% and 85% (respectively) of people as part of inpatient stroke unit care³ and aim to support recovery from stroke. The Royal College of Physicians (RCP)

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ We recruited occupational therapists and physiotherapists from specialist interest groups to examine a consensus among therapists for the reasons why a person who had a stroke may not receive the Royal College of Physicians' recommended minimum of 45 min of daily therapy within the UK.
- ⇒ Three rounds of a Delphi study were undertaken, between October 2019 and May 2020.
- ⇒ Recruitment for the second and third Delphi rounds was below target recruitment.
- ⇒ Due to the nature of the method, reasons for a lack of consensus presented have not been confirmed by participants.

provides guidelines for the management of stroke care in England, Wales and Northern Ireland. This includes a specific recommendation regarding the amount of rehabilitation to be delivered:

People with stroke should accumulate at least 45 minutes of each appropriate therapy every day, at a frequency that enables them to meet their rehabilitation goals, and for as long as they are willing and capable of participating and showing measurable benefit from treatment⁴ (p.25).

According to the Sentinel Stroke National Audit Program (SSNAP), therapy should be goal directed and can be provided to either an individual or a group. It includes home visits (where the person is present) and training of people who had a stroke and their carers. It does not include non-person contact activities, such as documentation and case reviews. Details regarding the audit of this guideline, including what constitutes therapy, are published in the SSNAP core dataset help notes.⁵



The recommendation for a minimum of 45 min of daily therapy is based on the consensus of the RCP guideline working party, influenced by systematic review evidence that more therapy leads to better outcomes in the first 6 months after stroke.^{6–9} However, this may be a simplification of the effect of time spent in therapy after stroke.¹⁰

The SSNAP reports that, from April 2021 to March 2022, 32% of people considered appropriate for physiotherapy and 34% for occupational therapy received this guideline amount,¹¹ based on delivery of therapy 5 days a week. It is unclear why not all people considered appropriate achieve this amount of rehabilitation.

Other research has considered factors that influence delivery of the 45-minute guideline using mixed-methods case studies,¹² ethnography^{13 14} and secondary analysis of SSNAP data.¹⁵ Collectively, these studies found that availability of resources (in terms of therapists' time) and clinical presentation of people who had a stroke influence therapy provision.^{12–15} In previous work, we have undertaken therapist focus groups, which provide additional insights into why people might not receive the recommended minimum amount of therapy from the perspective of those delivering intervention.¹⁶ This study found that reasons for non-delivery of the guideline related to either (a) suitability of the guideline for the person who had a stroke or (b) ability to deliver the guideline. It concluded that therapists decide who should receive therapy and how much they should receive, in the context of resource availability and therapist's judgement of the person's need and the benefit they will likely experience.

In the UK, therapists are autonomous professionals, who use assessment and observation to decide who will receive therapy after stroke, and the amount they will receive.^{12 14} Despite therapist views related to delivery of the 45-minute guideline being sought,^{12 13 16} to our knowledge, no study has aimed to gain a consensus from therapists on reasons why the 45-minute guideline is not always achieved, nor considered delivery of the 45-minute guideline beyond the inpatient setting. Consensus methods are used to gain agreement in areas, such as this, where there is limited research evidence.^{17 18} We considered that a consensus method could be used to investigate which of the potential reasons for non-delivery of the 45-minute guideline were agreed by the majority of therapists. Additionally, the 45-minute guideline was determined via expert consensus, so a consensus method to determine why the guideline is not always achieved was considered an interesting parallel.

This study aims to gain a consensus from occupational therapists and physiotherapists regarding the reasons why some people who had a stroke do not receive the recommended minimum of 45 min of therapy, 5 days a week, and the factors that influence therapy provision, in inpatient and community settings.

METHODOLOGY

Study design

A Delphi methodology was used to gain a consensus among therapists for reasons why a person who had a stroke might not receive the recommended minimum of 45 min of therapy. Delphi statements were developed using our focus group data¹⁶ and relevant research literature.^{12–14 19–24} Code-level focus group data were compared with and contrasted with the identified influences on therapy delivery from the relevant research data. The research team used this information, in addition to clinical experience, to formulate 51 statements for the initial Delphi questionnaire (see online supplemental table 1). A physiotherapist, who met the selection criteria below, piloted the questionnaire to test acceptability and ensure there were no ambiguities. Statements were revised accordingly. For each Delphi statement, participants rated their agreement using a 6-point Likert scale. Responses ranged from strongly disagree to strongly agree. Statements that were experience dependent also included the option 'unable to answer based on my experience'. For all statements, participants had the opportunity to comment and, in round one, to suggest further criteria for consideration. The questionnaire was administered electronically.

Prior to data collection, consensus was defined as 75% agreement. There is no universally recognised definition of consensus for a Delphi study,^{25 26} but values of around 70% are common,²⁶ and the agreement of three out of four clinicians was considered a reasonable consensus.

Recruitment

Based on Delphi method literature, target recruitment was 30–50 participants,^{17 27} who met the following criteria:

- ▶ Occupational therapist or physiotherapist.
- ▶ Experience in delivering therapy after stroke (in inpatient, ESD or community).
- ▶ Aware of the 45-minute guideline.

Participants were recruited by email, sent via specialist interest groups (Royal College of Occupational Therapists-Specialist Section for Neurological Practice and Association of Chartered Physiotherapists in Neurology), with the request that group members forward the invitation to anyone else who may be interested in participating. Those who met the criteria (self-reported) and consented were included in the study. Nominal demographic data were collected to characterise the study sample.

Data collection

Data were collected electronically, using the University of Southampton iSurvey software (www.isurvey.soton.ac.uk). After providing written informed consent, participants were given a link to the first Delphi questionnaire. Each Delphi questionnaire presented a series of statements, with which participants were asked to rate their level of agreement, using Likert scales. Those who had not responded were prompted via email, in line with ethical approval. After each round, statements that achieved a

consensus were removed and those which did not achieve a consensus were revised and included in the next Delphi round. This process continued, until further consensus was considered unachievable. Only participants who had completed the previous round were eligible to participate in the next round.

Data analysis

Based on the recommendation of Black,¹⁷ the 6-point Likert scales were divided into thirds, to indicate agreement (strongly agree/agree), disagreement (strongly disagree/disagree) or an ambiguous outcome (slightly agree/slightly disagree). In addition to this descriptive analysis, median of scores and IQR are presented, to demonstrate the distribution of opinion. Median and IQR were generated by giving each Likert scale response a numerical score, from 1 (strongly disagree) to 6 (strongly

agree) and calculated using Microsoft Excel. Analysis of the Delphi statements adhered to the following iterative process for each of the three rounds:

Step one: statements that achieved a consensus (75% or more respondent agreement in either agreement, disagreement or an ambiguous outcome) were removed from the Delphi questionnaire.

Step two: statements for which a consensus was not achieved were reviewed by three authors (BAC, JT and JB) and either reworded for inclusion in the following round or excluded if participants' responses suggested that a consensus was unlikely. These decisions were made in the context of the spread of responses and content analysis of participants' comments. A table was developed to manage the statement review process (table 1 gives examples of statements reviewed). Full analysis of all the

Table 1 Example of table used to review Delphi statements

Concept	Original statement	Agreement—thirds	Agreement—binary*	Relevant comments	New statement
Effect of impaired attention on therapy delivery	Round 1—a therapy session may end if the stroke survivor is not able to maintain appropriate attention to the therapy input	Disagree: 2.9% Ambiguous: 31.4% Agree: 65.7%	Disagree: 8.6% Agree: 91.4%	'Dependent on the reasons for this impaired attention—if other approaches or methods are not successful' (strongly agree) 'Part of the OT session will be to improve their attention—starting with shorter sessions as tolerated' (slightly disagree) (Many comments allude to the use of strategies)	A therapy session may end if the stroke survivor is not able to maintain attention to the therapy input, despite strategies to assist with maintenance of attention
	Round 2—a therapy session may end if the stroke survivor is not able to maintain attention to the therapy input, despite strategies to assist with maintenance of attention	Disagree: 6.9% Ambiguous: 24.1% Agree: 69%	Disagree: 6.9% Agree: 93.1%	'Therapy may be to increase attention' (disagree) 'Need to find other strategies' (slightly agree) 'In our unit we would probably take a little and often approach to patients like this or jointly treat with psychology or OT' (slightly agree) 'I may first adjust the task to engage the patient' (slightly agree) 'May continue with passive ROM and positioning' (slightly agree)	A therapy session may end if the stroke survivor is not able to maintain attention to the therapy input, despite strategies to increase and/or motivate attention

*Binary agreement was not used to analyse consensus, but to indicate to researchers if the responses were tending towards agreement or disagreement, or if there was an equal split. This helped to guide decisions regarding statement rewording and decisions about removal of statements if consensus was considered unlikely.
OT, occupational therapy; ROM, range of motion.

Delphi statements can be found in online supplemental table 2.

Following completion of round one, additional topics for consideration identified by participants were reviewed and statements added to round two. In rounds two and three, any statement that was reworded from the previous round included a link to the results of the previous statement, so participants could consider their response in relation to the group response in the previous round.

Three rounds were undertaken, between October 2019 and May 2020. A fourth round was considered, but not executed, as the number of respondents had dropped and there was potential for increased pressure on participants, due to the COVID-19 pandemic.

Patient and public involvement

This study is part of a wider programme of work, within which the opinions of people who had a stroke on the 45-minute guideline have been sought. However, as this study is specifically about therapists' implementation of the guideline, the opinions of people who had a stroke did not directly influence this study.

RESULTS

Forty-five participants consented to study participation and 35 (78%) completed round one. Of the 35 who completed round one, 29 (83%) completed round two and 26 (90%) completed round three. Please see [table 2](#) for participant details.

Across the three Delphi rounds, a total of 121 statements were presented to participants. Of these, 32 statements reached a consensus (see [tables 3 and 4](#)). These tables give the round of the Delphi in which the statement gained a consensus, the statement, the number of participants who contributed to the consensus, the results of the consensus (percentage and median (IQR)) and whether the statement relates to a reason for guideline non-achievement or a factor that influences therapy delivery. A further 37 statements were removed from the process (see [table 2](#), online supplemental table 2). Online supplemental table 2 presents the concept addressed in various statements, the Delphi round in which the statement was presented, the statement, the result (percentage agreement, disagreement or an ambiguous outcome), the reason the statement was removed from the Delphi study and whether the statement relates to a reason for

Table 2 Participant information

		Round one	Round two	Round three
Total number	(Physiotherapist/occupational therapist)	35 (20/15)	29 (16/13)	26 (12/14)
Years of experience working with people who had a stroke	Less than 1	2	0	0
	1	0	0	0
	2	1	1	0
	3	1	3	2
	4	2	1	3
	5	2	2	2
	6	4	3	1
	7	3	2	4
	8	2	1	0
	9	2	1	2
	10–15	8	9	6
16+	8	6	6	
Therapists' seniority*	Band 5	1	1	1
	Band 6	16	13	13
	Band 7	14	11	9
	Band 8a	4	4	3
Area(s) of stroke care participants consider themselves experienced in	Hyperacute inpatient	16	14	14
	Inpatient	29	22	20
	ESD	15	12	11
	Community-based rehabilitation	13	10	11

*Band 5: entry level for newly qualified therapists; band 6: senior therapist; band 7: advanced therapist/team lead; band 8a: clinical specialist/service lead.
ESD, Early Supported Discharge.

Table 3 Statements for which there was consensus agreement

Round	Statement	No of responses	Result %	Result median (IQR)*
1	A stroke survivor may not receive 45 min of therapy for medical reasons (such as unstable blood pressure, chest infection, nutritional status, etc)	35	77	5 (5–6)
1	A therapy session may end if the stroke survivor is not tolerating the therapy input	35	86	5 (5–6)
1	A stroke survivor may not receive the recommended amount of therapy if they do not consent to therapy	34	85	5 (5–6)
1	If a stroke survivor has returned to their pre-stroke level of functioning, they are less likely to continue to receive 45 min of therapy daily	34	94	5.5 (5–6)
1	My knowledge and understanding of stroke recovery affect the decisions I make regarding amount of therapy I provide to stroke survivors	34	76	5 (4.75–6)
1	It is important that I can justify the decisions I have made about the amount of therapy a stroke survivor receives	35	94	5 (5–6)
1	The therapy a stroke survivor receives should be based on what they need, not on a prespecified amount	35	88	6 (5–6)
1	Stroke survivors may not receive 45 min of therapy in the acute setting, due to the caseload being very large at times†	32	87	5 (5–6)
1	Lack of therapy staff can be a reason why a stroke survivor does not receive 45 min of therapy	35	88	6 (5–6)
2	If there is agreement that a stroke survivor is persistently failing to make progress in therapy, they are unlikely to continue to receive 45 min of therapy daily	29	83	5 (5–6)
2	In the community, a stroke survivor may not receive 45 min of therapy if they feel it more important to get on with their life	21	81	5 (5–5)
2	Fatigue is a reason why a stroke survivor may not tolerate 45 min of therapy (particularly if they are receiving multiple therapies)	29	83	5 (5–6)
2	In the hyperacute stroke unit, a stroke survivor may not receive 45 min of therapy due to new patient assessments being seen as a priority	18	89	5 (5–6)
2	In the hyperacute/acute setting, a stroke survivor may not receive 45 min of therapy due to patient discharges being seen as a priority	20	80	5.5 (5–6)
2	In the hyperacute/acute setting, a stroke survivor may not receive 45 min of therapy because of the size of the therapists' caseload†	20	80	5 (5–6)
2	Within teams I have worked in, non-patient contact activities (such as handover, MDT meetings, planning therapy sessions, ordering equipment and paper work) can limit therapists' ability to deliver 45 min of therapy to stroke survivors	27	89	5 (5–6)
2	The decisions I make about the amount of therapy I provide to a stroke survivor are not influenced by the stroke survivor, relative/carers' knowledge of the 45-minute guideline	28	75	5 (4.25–6)
2	In the inpatient setting, a stroke survivor may not receive 45 min of therapy if they need to go off the ward for a medical investigation and I am unable to reschedule their therapy that day	26	88	5 (5–6)
2	The fast-paced nature of the hyperacute/acute setting can make delivery of 45 min of therapy more challenging	18	89	5 (5–6)
2	Due to the time-limited nature of many ESD services, some stroke survivors are discharged from ESD when they would still benefit from 45 min of therapy, 5 days per week	16	88	5.5 (5–6)
2	In ESD, it is difficult to return to a stroke survivor for a second time in a day, if they are unable to tolerate 45 min of therapy in one session	14	86	5.5 (5–6)
2	If therapists are off sick in my organisation, then some stroke survivors may not receive 45 min of therapy	28	93	5 (5–6)

Continued

**Table 3** Continued

Round	Statement	No of responses	Result %	Result median (IQR)*
3	A therapy session may end if the stroke survivor is not able to maintain attention to the therapy input, despite strategies to increase and/or motivate attention	26	80.8	5 (5–5)
3	In some circumstances, a stroke survivor who remains unmotivated despite efforts to increase or manage motivation may not receive 45 min of daily therapy	26	84.6	5 (5–5)
3	If a stroke survivor consistently does not participate in therapy, despite efforts to encourage and enable participation, then they may not be prioritised for daily therapy	26	80.8	5 (5–5)

*Median and IQR calculated by transforming descriptive result to a numerical one: 1=strongly disagree, 2=disagree, 3=slightly disagree, 4=slightly agree, 5=agree, 6=strongly agree.

†Statements noted to be similar. This is due to the convergence of two different statements, in response to comments made by participants. ESD, Early Supported Discharge; MDT, multidisciplinary team.

guideline non-achievement or a factor that influences therapy delivery. Please see [figure 1](#) for a flow chart of the movement of statements through the Delphi rounds.

Of the 32 statements which reached a consensus, 25 statements were agreed (see [table 3](#)) and 7 were disagreed (see [table 4](#)). There were no statements with an ambiguous outcome (ie, slightly agree/slightly disagree). Of the statements that were agreed, 10 related to the suitability of the person for the guideline, 11 related to the ability of the organisation to provide the guideline and 4 were contextual factors that influence therapy delivery. Of the statements that were disagreed, five related to the suitability of the person for the guideline and two were contextual factors (ie, there was a consensus that these

were NOT reasons/factors why someone would be considered inappropriate for the guideline).

Of the 37 statements removed, 32 were removed as a consensus was considered unachievable and the remaining statements were removed as they were contained in other statements. Some of the 37 statements removed had been reworded from previous Delphi rounds (see online supplemental table 2).

DISCUSSION

This Delphi study gained a consensus between therapists on 32 statements related to the 45-minute guideline, but was unable to gain a consensus on a further 32 statements.

Table 4 Statements for which there was consensus disagreement

Round	Statement	No of responses	Result %	Result median (IQR)*
1	How I am feeling (including my mood and physical comfort) influences the decisions I make regarding amount of therapy I provide to stroke survivors	35	80	2 (1–2)
1	If a stroke survivor is not appropriate for 45 min of therapy per day, then they are not appropriate for any therapy	35	97	1 (1–1)
2	If a stroke survivor remains very dependent on care, they won't continue to receive 45 min of therapy daily	29	76	2 (2–2.5)
2	A stroke survivor will not receive 45 min of therapy if they lack comprehension of spoken language	29	93	1 (1–2)
2	In an inpatient setting, a stroke survivor may not receive 45 min of therapy due to social issues (such as lack of social support, addiction or social complexity)	27	93	1 (1–2)
2	If a stroke survivor is of a low educational level, then they may not receive 45 min of therapy	29	97	1 (1–1)
3	If a stroke survivor is able to undertake ANY independent exercise, then they won't receive 45 min of therapy	26	76.9	1 (1–2.25)

*Median and IQR calculated by transforming descriptive result to a numerical one: 1=strongly disagree, 2=disagree, 3=slightly disagree, 4=slightly agree, 5=agree, 6=strongly agree.

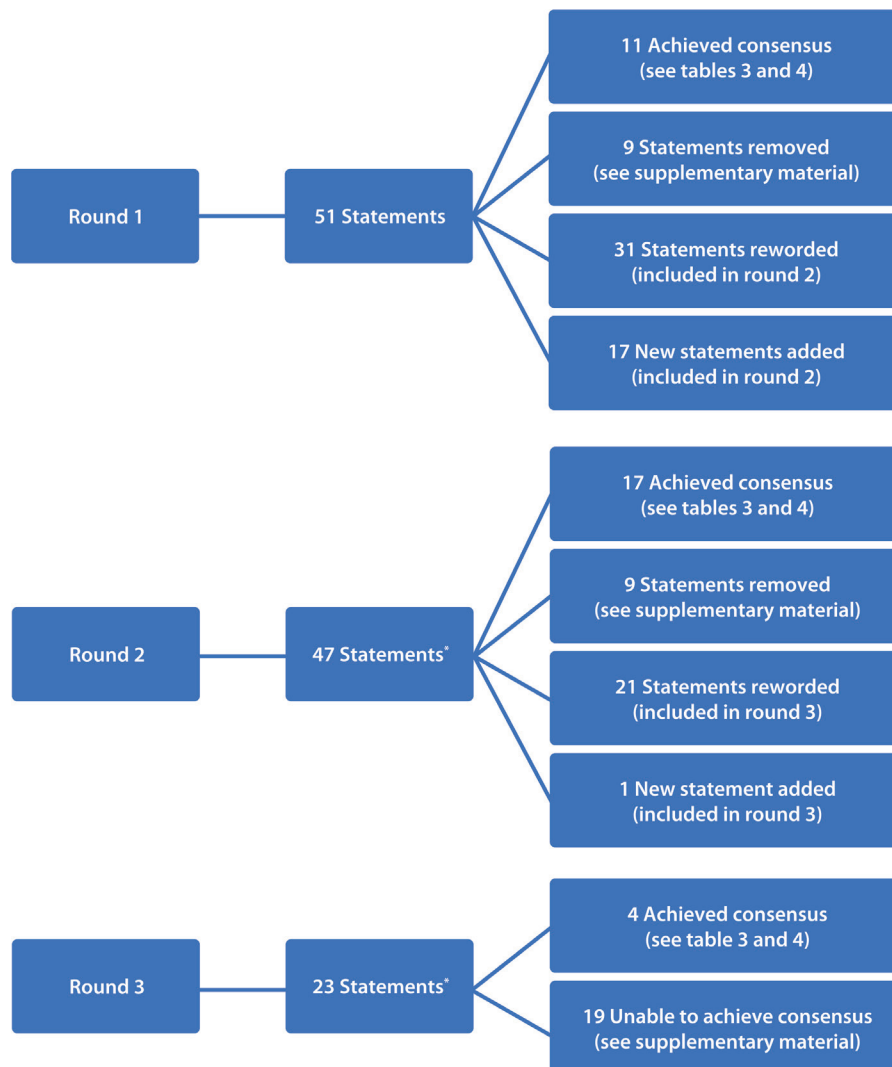


Figure 1 Flow chart of the movement of statements through the Delphi rounds. In each round, statements that achieved consensus were removed and added to table 3 or table 4, statements that were unsuitable to remain in the study were removed and added to the online supplemental table 2, the remaining statements were reworded and included in the next round of the Delphi and new statements were added to the next round of the Delphi as identified. *One statement inadvertently missed from round 2 and added to round 3.

As therapists' decision-making determines therapy delivery, therapists' views on this topic are important. The three main findings identified by this study are discussed: (1) reasons why a person might not receive the guideline amount of therapy (the person's suitability vs the organisation's ability), (2) challenges regarding the guideline in ESD and (3) statements on which a consensus could not be achieved.

Reasons why a person might not receive the recommended 45 min

The 21 agreed reasons why a person may not receive the guideline amount of therapy fall almost equally into one of two categories. Ten of the reasons are relative to a person's therapy tolerance, medical status or progress with therapy, which impacts their suitability for the guideline. The remaining 11 statements relate to the organisation's ability to provide the guideline, for reasons such as

size of therapists' caseload and other priorities competing with rehabilitation delivery.

Support for the guideline suitability/organisation's ability is found in a study by Gittins *et al.*¹⁵ who applied multilevel mixed-effects regression models to SSNAP data to investigate factors associated with amount of therapy delivered. They found that patient-related characteristics, such as pre-morbid disability and stroke severity, had the strongest influence on therapy delivery, but that there were organisational factors, such as day and time of admission and type of stroke team, that were also influential. Clarke *et al.*¹² also found that there were issues with an organisation's ability to deliver the 45-minute guideline in terms of resource usage and availability.

The guideline acknowledges that not all people are suitable for 45 min of therapy, 5 days per week, stating those 'willing and capable of participating and showing

measurable benefit from treatment'⁴ (p.25) should receive it. SSNAP accounts for this in the calculation of guideline achievement, by excluding any people who had a stroke who were not appropriate for therapy at any point during their admission. However, 6 of the 10 consensus reasons related to suitability indicate that some people who are suitable for therapy may not be suitable for the full 45 min or may be able to engage with therapy some days, but not others. For example:

A therapy session may end if the stroke survivor is not able to maintain attention to the therapy input, despite strategies to increase and/or motivate attention. (Delphi statement that achieved consensus in round three, 80.8% agreement).

This suggests that some people who are suitable for therapy are not suitable for 45 min of therapy every day.

It is unclear if the issues of a person's suitability and the organisations' ability are mutually exclusive or if they are ends of a spectrum along which therapists make decisions about those most suitable for the 45-minute guideline in the context of resource availability. The latter possibility is supported by a consensus on contextual factors, which therapists agree influence the delivery of the guideline (such as the therapists' knowledge and experience) and the finding from other research that therapists allow their knowledge of resource availability to influence their judgement of who is suitable for therapy.¹³

It is notable that none of the reasons why a person might not receive the 45-minute guideline reached a 100% consensus. While differences between individuals can be expected, there were some statements where this was particularly surprising. For example, the statement: 'A stroke survivor may not receive the recommended amount of therapy if they do not consent to therapy' achieved an 85% consensus in round one; one participant disagreed with this statement, one slightly disagreed and three only slightly agreed. This is unexpected, as consent for therapy is usually considered important. Comments suggest that those participants who did not agree/strongly agree were considering issues around mental capacity to consent. Potentially, if the statement had been reworded, it would have achieved a greater degree of consensus. Medical reasons and tolerance of therapy were other areas that, although they reached the predetermined level of consensus in round one, reached a lower degree of consensus than anticipated. Analysis of participants' comments related to these statements provides some explanation for the lower-than-anticipated levels of consensus.

Challenges regarding delivering the guideline in ESD

This study identified specific challenges regarding delivery of the guideline in ESD services. Twelve of 14 therapists with experience in ESD responded strongly agree/agree when asked if returning to someone more than once per day is difficult (which is required if they are unable to tolerate 45 min of therapy in one session).

This study also found that some people who would benefit from ongoing therapy do not receive it, due to ESD services being time-limited (eg, 6 weeks maximum input). The guideline states that people should continue to receive 45 min if they are showing measurable benefit⁴; therefore, time-limited ESD services may interfere with achievement of this. However, therapists in ESD services may teach people to manage their own rehabilitation and, therefore, ongoing daily therapy input may not be appropriate. This possibility may explain the lack of consensus on the appropriateness of the guideline in ESD services. Despite 13 of 18 therapists agreeing that 'the guideline for 45 min of therapy is appropriate for most stroke survivors receiving ESD', there were therapists who disagreed with this statement commenting that it was dependent on the person's goals and that ESD needs to be less prescriptive and adapt to the needs of the individual. Additionally, there was a lack of consensus on whether people receiving ESD had more than one session per day (in total, not per discipline involved). Some participants commented that interprofessional working is key and some people do not want more than one visit per day, as they find it intrusive. These issues may contribute to the reduced amount of therapy delivered in ESD compared with inpatient care.²⁸ Taken together, these findings suggest that the 45-minute guideline may not be suitable for people receiving ESD input and, potentially, a different recommendation should be provided for ESD.

Statements on which consensus could not be achieved

Reasons for lack of agreement were based on a qualitative analysis of participants' comments. Lack of consensus appears to be due to either (a) structural and/or institutional differences between services or (b) differences between therapists' approach to a given situation. An example of differences between services was the lack of consensus regarding the effect of therapy space and/or equipment. Such resources may vary between services, rendering this a consideration for some sites, but not for others. An example of differences between therapists' approach was the lack of consensus on the effect of a person's cognitive impairment on guideline delivery. Content analysis of the related comments suggests that some therapists would use strategies, some felt they would be unable to undertake their planned session and some felt it would depend on the impact of the cognitive impairment. These differing views reflect the similar lack of agreement regarding the impact of cognitive impairment on rehabilitation participation found in literature.^{29 30} A consensus was also not reached on statements that explored the impact of goals on guideline delivery. Goals are considered to be a key component of stroke rehabilitation³¹; however, a consensus was not reached for the effect that the absence of meaningful, achievable goals has on delivery of the guideline. This suggests inconsistency among therapists regarding the role of goals in therapy.

Another concept which did not reach a consensus was that people who require more than 45 min of therapy per day are able to receive it. Only 7 of 26 participants agreed that this happened, with staffing levels heavily cited as the reason. Statements related to this concept were only included in rounds one and three of the Delphi study (see study limitations below). The guideline states that 45 min is the minimum requirement and is the standard audited via SSNAP. Guideline achievement contributes to an overall 'SSNAP level' for an organisation, rated from A to E, with A being the most desirable score.³² For physiotherapy and occupational therapy, an 'A' rating is achieved if 45 min is delivered to a predetermined percentage of people. The ability to achieve the top rating by only providing the minimum recommended may not incentivise organisations to provide beyond the minimum. This means some people are not receiving the therapy that would allow them the greatest chance of recovery.

Some of the statements which did not achieve a consensus are reported in other studies as reasons why someone might not receive therapy. For example, Taylor *et al*²¹ report that lack of social support may affect rehabilitation input. However, in our study, therapists did not reach a consensus regarding the effect that lack of social support had on achievement of the 45-minute guideline in the community. Similarly, Skidmore *et al*²³ report that depressive symptoms affect participation in rehabilitation, yet in our study, a consensus was not reached for the effect of low mood on therapy input, despite being included in all three rounds.

Overall, the lack of consensus among therapists suggests that there are differences between services and between individual therapists regarding therapy delivery. Therefore, a person's experience of stroke care will be dependent on the service they access and potentially, their therapist too. Variation in therapy delivery is identified in other literature.^{13 21 28} Potentially, variation could be reduced by providing therapists with summarised, evidence-based information regarding how to optimise therapy delivery and by developing national stroke therapist competencies.

Strengths and limitations of the study

To our knowledge, this study is the first to examine consensus among therapists for the reasons why a person may not receive the 45-minute guideline after stroke, adding to the currently small evidence base for its implementation. Not only was the Delphi method a novel approach, but also appropriate for answering the research question, due to the limited evidence currently available.¹⁸ Therapists' opinions regarding why someone may not receive the guideline are relevant considering the role that their decision-making plays in therapy delivery, in the UK. Arguably, therapists may wish to represent themselves when providing rationale for this decision-making. A Delphi study was chosen to specifically consider which reasons for guideline non-achievement

were consistent among therapists, although it is interesting to also consider the findings which did not achieve a consensus.

Findings of this study must be considered in light of its limitations. A criticism of the Delphi technique is that results only represent simplified concepts.³³ In the context of this study, we cannot consider that the reasons that reached a consensus are the *only* reasons why a person might not receive the recommended minimum amount of therapy. The many concepts where a consensus could not be achieved also represent reasons why *some* people might not receive the guideline. Based on content analysis of the comments in the Delphi rounds, reasons for the lack of consensus have been presented. However, due to the nature of the method, those reasons have not been confirmed by participants, nor did all participants provide comments. The diversity of participants may have influenced the lack of consensus. Greater levels of consensus may have been gained from a more homogeneous group, focusing on a single aspect of the stroke pathway (eg, acute inpatient or ESD).

Another limitation is that the second and third rounds of the Delphi were completed by fewer than the lower target of 30 participants, potentially resulting in findings that are not generalisable to a wider therapist population. This may be particularly the case for statements which were experience dependent. A consensus on one such statement is attributed to the responses of only 14 participants. It is possible that some of the statements that did not achieve a consensus would have done so with a larger sample. On the other hand, those who did participate were predominantly very experienced stroke therapists. Based on those who participated in round one, therapists had a median 9 years' experience in stroke and were a median band 7. The views of less experienced therapists (who may form a large proportion of the therapy workforce) are not well represented and may be different to therapists with more experience. Finally, unfortunately, one statement reworded from round one was inadvertently missed from round two of the Delphi. It was included in round three, to mitigate, but means this statement only had the opportunity to be reviewed twice in the Delphi study, and it did not reach a consensus. Based on the comments made by participants, study authors did not feel this statement would reach a consensus with a third Delphi round.

Unanswered questions and implications for future research, guidelines and clinical practice

This study adds to the emerging evidence for the implementation of the 45-minute guideline, but there remain unanswered questions.

Suitability of 45 min of therapy for all people suitable for therapy requires further consideration, as findings of this study suggest that suitability for therapy does not equate to suitability for a minimum of 45 min. A recent Cochrane review found that additional time spent in rehabilitation following stroke had no effect on measures of activities of

daily living.¹⁰ Potentially, this finding relates to the importance of selecting the right people for intensive rehabilitation.^{34 35} Therapists would benefit from clear guidance regarding how to make such selections. There is currently some evidence regarding how therapists make these decisions¹²⁻¹⁴; however, our study and that of Taylor *et al*¹³ identify that there are inconsistencies in therapy delivery.

It is not known which consensus reasons are most commonly occurring in clinical practice and if either the suitability of the guideline or the organisations' ability to deliver the guideline has a greater influence on guideline non-delivery. This could be investigated by undertaking an observational, cross-sectional, prospective survey across England, Wales and Northern Ireland. Additional benefits of undertaking such a study would be validation of the findings of this study and further investigation of potential variations in therapy delivery. This would lead to enhanced understanding of the ongoing suitability for the guideline in clinical practice and the intervention required to increase guideline achievement.

This study has also raised further questions in relation to the 45-minute guideline. There is a question regarding the guideline's suitability for people receiving ESD and if its unsuitability might help explain the low guideline achievement in this setting. Additionally, further understanding regarding delivery of the therapy beyond the minimum recommended 45 min would help to understand if people are receiving the amount of rehabilitation that therapists believe they need, rather than the minimum recommendation.

The impact of COVID-19 on these findings

Data collection for this study occurred just prior to and during the early stages of the COVID-19 pandemic; there is evidence that the pandemic has affected therapy delivery. Early in the pandemic, there was a reduction in stroke admissions²⁸ and guidance from the RCP was that people should be discharged from hospital as soon as they could safely be cared for at home. This would affect the delivery of inpatient therapy, due to shorter length of stay. Telerehabilitation was encouraged as a means of supporting people's rehabilitation at home.^{36 37} Telerehabilitation is the use of information and communication technologies (for example, videoconferencing) to enable communication between a therapist and a person who had a stroke remotely.³⁸ Ford *et al*³⁷ report that telecommunication can occur synchronously (ie, face-to-face with a therapist in 'real time') or asynchronously (ie, using computer-based interventions that remotely monitor and adapt exercises). According to the definition of therapy given by SSNAP,⁵ therapy delivered via telerehabilitation (either synchronously or asynchronously) could contribute to the 45-minute guideline. The use of telerehabilitation, therefore, would affect the delivery of community-based therapy.

The long-term effects of the pandemic on stroke services are not known, but arguably the use of telerehabilitation in the community will continue, as a way of delivering

more therapy where appropriate. There is low-quality evidence that telerehabilitation is as effective as face-to-face therapy in stroke,³⁸ and there is acknowledgement that new models of rehabilitation delivery must be evaluated to ensure outcomes and standards are maintained.³⁷

The findings of this study are likely to remain relevant to inpatient stroke rehabilitation, as there does not appear to have been a significant change to inpatient therapy delivery and, according to SSNAP data, it remains consistently underachieved.³⁹ On the other hand, potentially more rehabilitation is now occurring in the community, particularly if the use of telerehabilitation has been embraced by stroke therapy teams and service users. This may have implications for the findings of this study, related to the success of delivery of rehabilitation in the community.

CONCLUSION

Confirming the findings of our focus group study,¹⁶ the three findings of this study contribute to two conclusions:

First, there are issues concerning the suitability of the guideline; there are some people suitable for therapy who are not suitable for a minimum of 45 min in a day, or may tolerate 45 min of therapy some days, but not others. Additionally, it may not be suitable for some people receiving ESD, as they may believe it stops them 'getting on with life'. Findings from this study and others¹⁶ suggest that therapist decision-making in terms of the 45-minute guideline is complex, which contrasts with the simplicity of the current guideline.

Second, there are issues concerning the delivery of the guideline. Services have limited ability to deliver the guideline, there are inconsistencies between therapists and services in guideline delivery and people who require more than 45 min of therapy do not consistently receive it.

Future research should focus on why the guideline is not achieved in ESD, and why people who require more than 45 min may not receive it. This could contribute to practical guidance for therapists to optimise therapy delivery for people after stroke.

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