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RESEARCH REPORT

Intensive and comprehensive aphasia therapy—a survey of the definitions, practices and views of speech and language therapists in the United Kingdom

Katie Monnelly  | Jane Marshall | Lucy Dipper | Madeline Cruice 

Department of Language and Communication Science, City University of London, London, UK

Correspondence

Katie Monnelly, Department of Language and Communication Science, City University of London, London, UK.
Email: katie.monnelly@city.ac.uk

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Abstract

Background: Research evidence suggests aphasia therapy must be delivered at high intensity to effect change. Comprehensive therapy, addressing all domains of the International Classification of Functioning, Disability and Health, is also called for by people with aphasia and their families. However, aphasia therapy is rarely intense or comprehensive. Intensive Comprehensive Aphasia Programmes (ICAPs) were designed to address this challenge, but such programmes are not widely implemented.

Aims: This study surveyed the views of UK-based speech and language therapists (SLTs) regarding intensive and comprehensive aphasia therapy. It explored definitions of intensive and comprehensive therapy, patterns of provision, views about candidacy and barriers/facilitators. It also investigated awareness of ICAPs and perceived potential of this service model. Differences across UK regions and workplace settings were explored.

Methods & Procedures: An e-survey ran for 5 months. Quantitative data were analysed using descriptive and inferential statistics. Qualitative free text comments were analysed using content analysis.

Outcomes & Results: Two hundred twenty-seven respondents engaged in the e-survey. Definitions of intensive aphasia therapy did not reach UK clinical guideline/research-level thresholds for most of the sample. Those providing more therapy provided definitions with higher standards of intensity. Mean therapy delivered was 128 min/week. Geographical location and workplace setting influenced the amount of therapy delivered. The most frequently delivered therapy approaches were functional language therapy and impairment-based

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therapy. Cognitive disability and fatigue were concerns for therapy candidacy. Barriers included lack of resources and low levels of optimism that issues could be solved. 50% of respondents were aware of ICAPs and 15 had been involved in ICAP provision. Only 16.5% felt their service could be reconfigured to deliver an ICAP.

Conclusions & Implications: This e-survey evidences a mismatch between an SLT's concept of intensity and that espoused by clinical guidelines/research. Geographical variations in intensity are concerning. Although a wide range of therapy approaches are offered, certain aphasia therapies are delivered more frequently. Awareness of ICAPs was relatively high, but few respondents had experience of this model or felt it could be executed in their context. Further initiatives are needed if services are to move from a low-dose or non-comprehensive model of delivery. Such initiatives might include but not be confined to wider uptake of ICAPs. Pragmatic research might also explore which treatments are efficacious with a low-dose model of delivery, given that this model is dominant in the United Kingdom. These clinical and research implications are raised in the discussion.

KEYWORDS

aphasia, speech and language therapists, Intensive Comprehensive Aphasia Programmes

What this paper adds

What is already known on this subject

- There is a gap between the high intensity of aphasia treatment provided in research versus mainstream clinical settings. A lower standard of 45 min/day set by UK clinical guidelines is also not achieved. Although speech and language therapists (SLTs) provide a wide range of therapies, they typically focus on impairment-based approaches.

What this study adds

- This is the first survey of UK SLTs asking about their concept of intensity in aphasia therapy and what types of aphasia therapy they provide. It explores geographical and workplace variations and barriers and facilitators to aphasia therapy provision. It investigates Intensive Comprehensive Aphasia Programmes (ICAPs) in a UK context.

What are the clinical implications of this work?

- There are barriers to the provision of intensive and comprehensive therapy in the United Kingdom and reservations about the feasibility of ICAPs in a mainstream UK context. However, there are also facilitators to aphasia therapy provision and evidence that a small proportion of UK SLTs are providing intensive/comprehensive aphasia therapy). Dissemination of good practice is necessary and suggestions for increasing intensity of service provision are listed in the discussion.

INTRODUCTION

Aphasia is an acquired disorder of language which typically occurs because of a stroke. The Cochrane review provides level 1 evidence that speech and language therapy is effective for aphasia (Brady et al., 2016). However, it is crucial that intervention be provided at adequate levels of intensity to achieve gains. But what is meant by intensity or intensive aphasia therapy (IAT)? The Cochrane review (Brady et al., 2016) used four metrics—intensity, dose, duration and frequency. A review from Harvey et al. (2020) found that most aphasia studies use dose and intensity interchangeably and define these metrics in terms of total hours or number of sessions. Interchangeable use of terms is a challenge, as is the definition of high and low intensity. One study in the Cochrane review delivered 4 h/week in the high-intensity arm whereas another delivered 5 h/week in the low-intensity arm (Brady et al., 2016). Baker writes ‘there is no precise answer regarding the point at which a particular cumulative intervention intensity (or for that matter the number of teaching episodes, frequency and duration of sessions or total number of sessions) becomes intense’ (2012:482). Warren et al. produced a method for defining intensive therapy using dose ‘the number of properly administrated teaching episodes during a single intervention session’ (2007:71). This is complex to measure given the variety of content delivered within a clinical therapy session. Although the field of aphasia is still unclear about what constitutes high-intensity therapy, intensive therapy delivered in research is at higher intensity (e.g., at least 5 h/week in 44 studies reviewed by Menahemi-Falkov et al., 2021) than the intensity delivered clinically (discussed later).

What does the evidence suggest for intensity and dose in aphasia therapy? A systematic review of $n = 959$ individual participant data sets from $n = 25$ trials showed the greatest gains were made when more than 20 h of therapy was provided, at least 2 h/week, for at least 3 days/week (RELEASE Collaborators, 2022). In terms of comparison studies, COMPARE, the largest aphasia randomised controlled trial (RCT), compared two arms of intensive aphasia intervention ($n = 140$) versus usual care ($n = 61$) (Rose et al., 2022). It found no change in the primary outcome of aphasia severity, but the intensive arms were more effective than usual care for changes in word retrieval, functional communication and quality of life. Do therapeutic gains depend on high intensity or high dose? This question is unresolved. There are some indications that a lower intensity but high-dose approach (i.e., a dispersed model of therapy) may be preferable especially for impairment-based outcomes for example, naming—(see systematic reviews by Cherney et al., 2011 and Pierce et al., 2020).

Whether engagement in intensive regimes results in maintenance of gains at follow-up has also been challenged. A recent systematic review found only one in five who attended an intensive aphasia programme (5 h/week minimum) maintained their gains at follow-up (Menahemi-Falkov et al., 2021). It may be that long-term gains arise from more distributed practice, or that intensive doses of therapy need some form of follow-up to maintain gains. The timing of high-dose therapy is also a key consideration. Two RCTs revealed that intensive aphasia treatment in the acute stage (2 weeks post stroke) is no more effective than (a) low-dose/low-intensity treatment (Godecke et al., 2021) or (b) no more effective than no speech and language therapy at all (Nouwens et al., 2017). Godecke et al. (2021) measured outcomes using measures of language, quality of life and depression and Nouwens et al. (2017) used a test of everyday communication.

Despite the lack of consensus on the ideal level of intensity of aphasia therapy delivery, it is evident that a high dose needs to be delivered. This is somewhat intuitive—to acquire a new language requires hours of learning, so reacquiring language lost to brain damage requires high-dose input. The UK stroke national clinical guidelines set a target of 45 min every day for speech and language therapy intervention for stroke survivors (Intercollegiate Stroke Working Party, 2016). The United Kingdom (excluding Scotland) has the only national healthcare system which audits the intensity of speech and language therapy provision for stroke survivors on an ongoing basis—the Sentinel Stroke National Audit Programme (SSNAP). SSNAP data from 2018 reveal 20.9 min was the average speech and language therapy session length (SSNAP, 2018). In the April 2020–March 2021 National Clinical Report, only 21% of eligible patients were receiving 45 min/day $\times$ 5 days a week (SSNAP, 2021). Many reasons have been suggested. These include difficulties de-implementing past practice due to structural forces beyond a clinician’s control (Montini & Graham, 2015), patient factors: women, people from non-white backgrounds and people with milder strokes all receive less speech and language in the United Kingdom (Gittins et al., 2020), differences between healthcare settings and clinicians on what qualifies as therapy for SSNAP audit for example, direct intervention versus writing a discharge report (Taylor et al., 2018), and therapist time spent in information exchange or indirect patient activity (Clarke et al., 2018). Duration of speech and language therapy in the 2015 post-acute audit was shown to last no more than 3 months for 94% of those receiving it (SSNAP, 2015). People with aphasia (PWA) in the Northwest of England were found to receive 1 h 23 min/week of speech and language therapy post discharge from acute services (Bowen

et al., 2012) or up to an hour/week across all regions of the United Kingdom (Palmer et al., 2018). PWA in the United Kingdom receive far less aphasia therapy than research and clinical guidelines recommend.

The United Kingdom is not alone in falling short of recommended targets. Past international research has found provision to average 1–5 h/week (Code & Petheram, 2011) or 1–20 sessions in the acute stage (Katz et al., 2000). Recent research from Pittsburgh found the average dose provided to 602 PWA in private healthcare was a median of 7.5 h in 10 sessions, 1.4 times a week (Cavanaugh et al., 2021). A scoping review of 303 articles found a median of 20 h of aphasia treatment provided in 15 sessions 2–5 times per week further evidencing a research-to-practice gap in the United States (Cavanaugh et al., 2021).

But quantity is not the only concern in aphasia treatment. Of equal importance are quality and what type of aphasia therapy is delivered. PWA (Worrall et al., 2011) and their families (Howe et al., 2012) desire intervention that goes far beyond treating the impairment (e.g., naming tasks), and covers all domains of the International Classification of Functioning (ICF; WHO, 2001) particularly focusing on activities and participation. This can be termed ‘comprehensive’ aphasia therapy (CAT)—that which addresses the comprehensive needs of PWA. Illustrating the complex needs of PWA is the incidence of mental health disorders in this population. Anxiety rates are higher for PWA (44%, Morris et al., 2017) than stroke survivors without aphasia (29%, Rafsten et al., 2018). The prevalence of depressive disorder post stroke is 52% for those with aphasia which is twice as high as those without aphasia (Mitchell et al., 2017). There is level 1 evidence for comprehensive approaches such as communication partner training (CPT) (Simmons-Mackie et al., 2016), group therapy (Brady et al., 2016; Elman & Bernstein Ellis, 1999) and technology-based interventions (Zheng et al., 2016), all of which can confer a range of psychosocial benefits. Specific national guidelines for speech and language therapists (SLTs) working in aphasia are under review both in the United Kingdom and internationally; however, older Australian and UK clinical guidelines for SLTs emphasised the need for comprehensive therapy approaches (Australian Aphasia Rehabilitation Pathway, 2014; RCSLT, 2005). Yet comprehensive approaches appear to be underutilised in speech and language therapy with much therapy focussing on the treatment of word finding and delivered in 1:1 contexts (Brogan et al., 2020; Palmer et al., 2018). The quality and content of therapy is important both to therapists and patients (Taylor et al., 2018; Worrall et al., 2011), but is not audited.

Although there is research literature detailing the desired goals of PWA according to the ICF which evidence a desire for therapy to address more than the impair-

ment (Wallace et al., 2017; Worrall et al., 2011), there are no clearly stated clinical or research guidelines for comprehensive therapy content. Existing guidance is dated. For example, the Royal College of Speech and Language Therapists’ resource manual for commissioning and planning services for aphasia which contained detail on assessment and intervention guided by the ICF was last updated in 2014 and has been retired and replaced by shorter generic web content. The Australian Aphasia Rehabilitation Pathway provides detail on potential comprehensive approaches but has been under renovation since 2020.

A service delivery model termed Intensive Comprehensive Aphasia Programme (ICAP) offers one response to the limitations in provision outlined previously. A 2021 survey paper found growth in ICAPs worldwide from 12 in 2013 to 21 in 2020 (Rose et al., 2021). The intensive component of an ICAP is defined as at least 3 h/day of therapy, 5 days/week, for 2 weeks, a total dose of 30 h (Rose et al., 2013). The comprehensive therapy component requires that therapy be delivered in a mixture of formats (e.g., individual and group), addressing more than just the aphasia impairment (e.g., targeting activities and participation or quality of life in therapy), education should be provided (to the PWA or other) and an ICAP should be delivered to a cohort of people starting and ending the programme together. Caregiver inclusion on an ICAP is also a suggested component. A scoping review of 17 ICAPs with peer-reviewed published data found that although the basic parameters of an ICAP are defined, programmes vary widely in their interpretation and ratio of comprehensive content, and interventions are highly personalised, which brings into question the active ingredients of an ICAP (Monnelly et al., 2021). Rose et al. (2021) found most ICAPs were funded by self-pay or insurance (9/14) or research funds (3/14), and donations were required to sustain 6/14 programmes. ICAP costs have been reported to vary between \$70 and \$5229 per week per person (Henson, 2016). There have been only two published ICAPs run in mainstream healthcare settings with no cost implications to participants (Brindley et al., 1989; Leff et al., 2021). These ICAPs were one-off occurrences in one healthcare location and were/are time limited. There are efforts underway in Australia to implement a well-researched university-based ICAP ‘Aphasia LIFT’ (Dignam et al., 2015; Rodriguez et al., 2013) into a clinical setting (Shrubsole et al., 2022). Currently, ICAPs are not mainstream approaches to aphasia rehabilitation, but are growing in popularity (Rose et al., 2021).

Shrubsole et al (2019a) advise that to implement an aphasia intervention in a clinical context, due consideration must be given to addressing known barriers, and that for successful implementation, solutions must match

the type of barriers which present. There are known barriers and facilitators to aphasia therapy provision which have previously been explored using survey methodology. Variation in provision based on workplace setting is a key variable (Manning et al., 2020) with more intensive therapy provided in the inpatient rehabilitation setting than other settings (Verna et al., 2009) and more barriers to meeting aphasia guideline recommendations experienced by those in acute versus rehabilitation (Shrubsole et al., 2019b). A US survey of 90 SLTs found functional communication was a more common therapy target in the community setting (Tierney-Hendricks et al., 2022). Taylor et al. (2015) found that institutional goals played a role in therapy intensity (e.g., there was a focus in some settings on discharge planning and reducing length of stay rather than providing intensive rehabilitation), see also Putman et al. (2007). Lack of time for aphasia therapy provision was the main barrier identified by Young et al. (2018). An ethnographic study across three inpatient stroke units in the United Kingdom found that therapists wanted to provide greater intensity therapy (Taylor et al., 2018). They internalised the ‘more is better’ mantra, but this did not positively affect the quantity of their provision. ‘Therapists in all sites discussed having internalised the message that ‘more is better’, but this had become a voice of guilt in the backs of their minds rather than something that changed their practice’. (Taylor et al., 2018: 6). A therapist’s personal views as influenced by both their training and colleagues may shape their practice (Gabbay & Le May, 2011) and act as a barrier or facilitator. There may be client factors which act as a barrier to aphasia therapy delivery. Studies have explored the impact of cognitive ability (Dignam et al., 2017; Yeung & Law, 2010) and fatigue (Pierce et al., 2022; Riley, 2017; Riley et al., 2021) on aphasia therapy outcomes. Finally, focus groups have gathered barriers and facilitators to implementation of IAT, CAT and ICAPs across international settings (Trebilcock et al., 2019). Collaboration for example, across the continuum of care, innovation to overcome healthcare structure challenges, and changing culture to value communication intervention were amongst the themes identified by SLTs as having the potential to affect positive change in aphasia therapy provision.

The purpose of this study was to explore how UK based SLTs working with PWA define IAT and CAT, what intensity/comprehensiveness of therapy they provide, what they perceive as the barriers and facilitators to provision and their views on service user candidacy for therapy. In terms of influences on therapy provided, we were interested in discrepancies in provision across UK geographical locations and workplace settings (e.g., acute versus community). We were also interested in relationships between answers for example, whether respondents’ definitions of intensity related to their actual levels of provision; and

whether their beliefs about changing provision related to workplace setting, geographical location or their current service levels. The study also sought to explore SLT views on the ICAP model.

Research questions

1. How do aphasia SLTs in the United Kingdom define intensive aphasia therapy (henceforth referred to as IAT)?
2. How much therapy do UK SLTs deliver to PWA and does geographical location or workplace type influence the amount delivered?
3. How do aphasia SLTs in the United Kingdom define comprehensive aphasia therapy (henceforth referred to as CAT)?
4. What CAT regimes are being provided to PWA by UK SLTs and does geographical location or workplace type influence what is delivered?
5. What are the intrinsic and extrinsic service user candidacy factors UK SLTs consider for IAT and CAT?
6. What are the barriers and facilitators to provision of IAT and CAT in a UK context and does geographical location or workplace type influence these barriers and facilitators?
7. What level and detail of awareness is there of ICAPs in the United Kingdom?
8. What are the views of SLTs about ICAPs, including those with and without experience of ICAP delivery?

METHODS

Survey methodology and design

This study used e-survey methodology to ask about SLT practice in the year prior to March 2020. This was because it was anticipated that aphasia therapy delivery would be affected by COVID-19, and indeed this has been confirmed (Chadd et al., 2021). The e-survey was created on Qualtrics. The survey was constructed following guidance on survey methodology (Dillman et al., 2014), for example with respect to question order, layout and numbering. The survey and study methods received ethical approval from the Division of Language and Communication Science Proportional Review Committee at City, University of London (ETH2021-0357). There were six sections to the survey—see Appendices 1 or 2 for the survey questions and a completed CHERRIES checklist (the Checklist for Reporting Results of Internet E-Surveys; Eysenbach, 2004). Two sections were written using the Theoretical

Domains Framework (TDF; Cane et al., 2012; Michie et al., 2005). The domains of the TDF explain behaviour change and were devised by expert consensus. The domains were validated and consolidated in 2012 resulting in the following 14 domains: knowledge; skills; social/professional role and identity; beliefs about capabilities; optimism; beliefs about consequences; reinforcement; intentions; goals; memory, attention and decision processes; environmental context and resources; social influences; emotions; and behavioural regulation. The survey flow was as follows: IAT, TDF questions on intensity, CAT, TDF questions on comprehensiveness, ICAP questions and demographic questions. To illustrate, questions on intensity explored all domains of the TDF framework, such as knowledge ('there is an evidence base for intensive therapy'), intentions ('I always intend to provide clients with IAT where possible') and environmental context and resources ('where I work, all necessary resources are available to deliver IAT'). Phrasing of questions was generated from TDF questions used in other published papers (Arnold et al., 2020; Chang et al., 2018; Cruice et al., 2020; Huijg et al., 2014; Seward et al., 2017). There was a seventh optional section on COVID-19 at the end.

The e-survey was disseminated via social media (Twitter) and clinical excellence networks (CENs) for SLTs which related to the survey topic, for example, the Aphasia Therapy CEN. One reminder notification was sent by the CENs.

The e-survey ran from 18 December 2020 until 18 May 2021 (5 months).

Patient and public involvement

A patient public involvement (PPI) approach was taken. An early version of the survey was used initially to scope SLTs' views in a PPI activity. This led to a redrafted version which was reviewed by six SLTs, one manager, two family members of PWA and one person with aphasia who provided written and oral feedback. As a result of the PPI, questions were reworded or merged, additional multiple-choice answers were provided, and an estimated time to complete survey was derived.

Definitions used in survey questions

There are many definitions of IAT. This research used the lowest standard available—the 45 min of therapy metric used by the SSNAP in England/Wales/NI. The SSNAP metric of 45-min per day, 5 days a week was drawn from NICE stroke rehabilitation guidelines GC162 (NICE, 2013),

NICE guidance on stroke (NICE, 2016) and The Royal College of Physicians national clinical guidelines for stroke (Intercollegiate Stroke Working Party, 2016). The sources do not explicitly state that 45 min is intensive. Nor do they state that it is not intensive. The professional opinion from the Royal College of Physicians 2016 guideline seems to have been influenced by (1) trying to find a pragmatic level of intervention intensity that would not cause dropout reported in literature (Brady et al., 2016), (2) issues with fatigue in early stroke recovery and (3) evidence from motor recovery that short and regular sessions in the first 2 weeks are preferable. It is fair for researchers and clinicians to infer that 45-min of speech and language therapy a day for at least 5 days/week is seen as a minimum level of intensive intervention.

In the absence of a definition of CAT in the wider aphasia literature, the ICAP definition of comprehensiveness was used in this study, that is, therapy delivered in multiple formats, targeting all ICF domains, providing education and desirable involvement of family/carers (Rose et al., 2013).

Both definitions or metrics were used in creating survey questions and in analysing responses.

Analysis

Survey results were downloaded directly from Qualtrics to Excel. The data were cleaned (respondents who had not answered initial work demographic questions were removed) and the full data set was then imported into the Statistical Package for the Social Sciences (SPSS) Version 27 (IBM) and NVivo Version 12. Most questions were addressed through descriptive statistics, such as % rate of responses. In some cases, factors influencing responses could be explored via nonparametric comparisons (Kruskal–Wallace and chi-square statistics). Nonparametric tests were used as the data were not normally distributed. Basic and additional qualitative and quantitative analysis was conducted on NVivo for example, word frequency counts for free text answers and creation of codes in response to free text answers.

This survey was limited to SLTs practicing in the United Kingdom as the intensity metric on which the survey was based was the 45-min NICE guidance target which would be unfamiliar to therapists from other countries. Any SLT working in the United Kingdom with PWA was eligible to take part.

See Figure 1 for survey flow. Two hundred fifty-one respondents were eligible to complete the survey and 147 completed the final section. One hundred eleven provided

Section of survey	Number of participants
Consented	n = 280
Eligible	n = 251
Answered work demographics	n = 227
Answered first 5 intensive questions	n = 197
Answered all intensive questions	n = 183
Answered TDF intensive questions	n = 178
Answered comprehensive questions	n = 163
Answered TDF comprehensive questions	n = 150
Answered ICAP questions	n = 148
Answered final demographic questions	n = 147

FIGURE 1 Survey flow. Abbreviations: ICAP, Intensive Comprehensive Aphasia Programme; TDF, Theoretical Domains Framework.

answers for an optional section on COVID-19 after the end of the main survey.

Participants

Most respondents were SLTs (90%) rather than managers and were experienced in aphasia—the most common (mode) length of work in aphasia was 5–10 years and 41% had worked for more than 10 years in aphasia—see Table 1. UK geographical coverage was representative of the UK population (ONS, 2021). Greater London accounted for 17% of respondents followed by the Northwest of England (14.5%). The two most common workplace settings were acute (30%) and community (25%). The majority (86%) worked solely in the National Health Service (NHS). For 89% of respondents, their caseloads constituted more than 20% aphasia with the mode response being a caseload of 40%–60% aphasia. Therefore, most respondents were basing their answers on substantial experience in the field of aphasia.

Respondents completing the survey (where final demographics were gathered), were predominantly female, mostly likely to be aged 31–40, working at band 7 or 6, based in an urban setting and had at least a university degree—see Table 2. Bands refer to seniority and skill levels within the UK NHS with newly qualified SLTs starting at band 5. Participants were almost evenly divided between full- and part-time work.

TABLE 1 Workplace demographics of those who started the survey ($n = 227$).

Variables	<i>n</i>	%
Role		
SLT	204	90%
SLT manager	4	2%
50:50 SLT and manager	19	8%
Years working in aphasia		
1 year	14	6%
1+ to 3 years	39	17%
3+ to 5 years	36	16%
5+ to 10 years	45	20%
10+ to 15 years	33	15%
15+ to 20 years	21	9%
More than 20 years	39	17%
Workplace geographical region		
England	173	76%
Scotland	21	9%
Wales	15	7%
Northern Ireland	13	6%
More than one region	5	2%
Workplace type		
Acute	68	30%
Community	56	25%
Inpatient rehabilitation	30	13%
More than 1 setting	24	11%
Early Supported Discharge (ESD)	15	7%
Private practice	14	6%
Out-patient clinic	13	6%
University clinic	5	2%
Charity group	1	<1%
Other	1	<1%
NHS or private		
NHS	196	86%
Private	27	12%
Mixed	4	2%
Percentage of caseload as aphasia		
Less than 20%	23	10%
21% to 40%	54	24%
41% to 60%	66	29%
61% to 80%	51	23%
81% to 100%	30	13%
SLT manager (no active caseload)	3	1%

Abbreviations: NHS, National Health Service; SLT, speech and language therapist.

TABLE 2 Demographics of $n = 147$ who completed the entire survey.

Variables	<i>n</i>	%
Gender identity		
Female	143	97%
Male	3	2%
Prefer not to say	1	1%
Age bracket		
20–30	38	25.9%
31–40	53	36%
41–50	42	28.6%
51–60	11	7.5%
61–70	3	2%
71+	0	–
NHS banding (payscale)		
Band 5	12	8.2%
Band 6 (specialist)	54	36.7%
Band 7 (highly specialist)	57	38.8%
Band 8+ (principal/clinical lead/advanced practitioner/clinical specialist)	16	10.9%
I do not work in the NHS	8	5.4%
<i>I estimate my NHS banding would be Band 7</i>	5	–
<i>I estimate my NHS banding would be Band 8+</i>	2	–
<i>I cannot estimate what my banding would be in an NHS context</i>	1	–
Working schedule		
Full-time	78	53.1%
Part-time	69	46.9%
Geographical area of work		
Primarily urban setting (e.g., hospital in a city)	84	57.5%
Primarily rural setting (e.g., clinic in the countryside)	14	9.6%
Mix of urban and rural (e.g., part-time in a city, part-time visiting patients in rural settings)	48	32.9%
Highest level of education		
University degree (bachelor's)	64	43.5%
University post-graduate qualification (Post-graduate diploma)	26	17.7%
University higher degree (master's)	56	38.1%
University advanced degree (doctorate)	1	0.7%

Abbreviation: NHS, National Health Service.

RESULTS

Results have been presented to answer each of the eight research questions in order, that is, 1a–d all refer to research question 1.

1a. How do UK SLTs define intensive aphasia therapy?

Respondents' definition of IAT was probed first by an open text question 'Could you please enter a definition of IAT?'. Analysis of free text answers revealed 37% of SLTs defined IAT in ways that met or exceeded NICE guidelines. The

other 63% provided a definition of IAT that either (1) did not meet NICE guidance, (2) the definition was not adequately specific, (3) the definition did not qualify as a definition of IAT or (4) no definition was provided—see examples in Table 3.

Multiple-choice options for the same question were provided and produced almost the same result as the free text answers—see Table 4. Many respondents selected options that met or exceeded the 45 min/day metric. However, this was not reflected in their response to the *weekly* intensity question where almost 45% of respondents left the question on weekly intensity blank. Only 70/197 (36% of the sample) selected both 45 min or more per day *and* 3 h 45 min or more per week as their definition of intensive.

TABLE 3 Free text definitions of intensive aphasia therapy.

Category	%	n of 197	Example definition (survey participant number)
Did not meet NICE guidance	27%	54	'I class intensive as when patient is seen more than once a week' [#30]
Met NICE guidance	15%	30	'daily therapy for 45 min working on a specific impairment through therapy' [#97]
Exceeded NICE guidance	22%	44	'therapy of more than typical 45–60 min per day' [#85]
"10–30 h of therapy a week for 4–8 weeks" [#103]			
Definition is inadequately specific	27%	53	'regular direct or indirect treatment targeting a person's communication potential' [#15]
Not a definition of intensive therapy	6%	11	'provision of communication, educational and psychological support to patients and their families and carers' [#25]
No definition provided	3%	5	n/a

TABLE 4 Multiple-choice definitions of intensive aphasia therapy.

In your opinion, how much aphasia therapy should be given per day to count as intensive aphasia therapy?			In your opinion, how much aphasia therapy should be given per week to count as intensive aphasia therapy?		
	n	%		n	%
30 min per day	15	7.6%	2 h 30 min	11	5.6%
45 min per day	54	27.4%	3 h 45 min	22	11.2%
1 h per day	55	27.9%	5 h	35	17.8%
2 h per day	19	9.6%	10 h	23	11.7%
3 h per day	20	10.2%	15 h	11	5.6%
4 h per day	5	2.5%	20 h	4	2%
5 h per day	1	0.5%	25 h	3	1.5%
Blank	28	14.7%	Blank	88	44.7%
Total	197		Total	197	

Using the Rose et al. (2013) ICAP metric, 13% selected options that met or exceeded the 3 h/day metric and 9% selected 15 h+/week. Only 7% (13/197) selected both 3 h+/day and 15 h+/week as their definition of intensive.

1b. What concepts do UK SLTs use in their descriptions of IAT?

Word frequency analysis in NVivo showed that some therapists used the four metrics from the Cochrane review of aphasia therapy (Brady et al., 2016) when defining IAT—19% used the term intensity, 10% used frequency, 3% used duration and 2% used dose.

1c. How long do UK SLTs think IAT should last?

In relation to duration of therapy, over half (almost 60%) felt therapy should last for either 4 or 6 weeks, see Table 5.

1d. Do UK SLTs have a model of dispersed delivery of IAT?

Respondents were asked to signal daily/weekly doses of therapy and recommend a duration of therapy to meet the criterion of 'intensive'. It was hypothesised that some participants may have selected a lower dose of intensity but a longer duration of therapy—that is, advocating a dispersed model of therapy in which a lower daily/weekly dose is administered over an extended duration, as evidence on the impact of therapy intensity versus overall dose is equivocal. However, using a chi-square test for independence (with Yates' Continuity Correction) no significant association was found between duration of therapy in weeks and minutes per day ($\chi^2 (1, n = 168) = 0.00, p = 1$, phi = 0.001) or hours per week ($\chi^2 (1, n = 108) = 0.02, p = 0.9$, phi = 0.03). This indicated respondents did not have a model of low intensity but longer duration therapy—that is, a dispersed practice model. SLTs believed therapy should be delivered evenly across the week (44%) rather

**TABLE 5** How long should IAT last.

In your opinion, how long should aphasia therapy last to count as intensive aphasia therapy?	<i>n</i>	%
1 week	4	2%
2 weeks	22	11%
3 weeks	16	8%
4 weeks	59	29.9%
5 weeks	2	1%
6 weeks	58	29.9%
More than 6 weeks	35	17.7%
Blank	1	.5%
Total	197	100%

Abbreviation: IAT, intensive aphasia therapy.

than achieving a set number of hours (14%), but many did not have a preference (30%) or were unsure (12%).

2a. How much therapy do UK SLTs deliver?

The average amount of therapy provided per person with aphasia per week was 128.3 min (SD 86.5), range 20–540 (Md = 120; $n = 175$). An outlier response of 1800 min/week relating to ICAP therapy was removed from this and the following analyses. A minority, 15% of the sample ($n = 26$) met/exceeded weekly NICE guidance in the therapy they delivered.

2b. Was there an influence of geographical region on amount of therapy provided?

A Kruskal–Wallis test showed a difference across UK regions, $\chi^2 (10, n = 175) = 22.62, p = 0.012$. Median therapy delivered was highest in Northern Ireland (Md = 180 min/week) with the Southwest of England (Md = 60 min/week) at the lowest end of the scale, see Table 6. Additionally, of 15% who reported they met/exceed NICE therapy delivery, almost 6% worked in Greater London, 3% in Northeast and Yorkshire and the rest across other regions. No one in the Midlands, Northwest or Scotland met or exceeded NICE guidance.

2c. Was there an influence of workplace type on amount of therapy provided?

A Kruskal–Wallis test showed a difference across workplace types, $\chi^2 (9, n = 175) = 43.53, p = <0.00$. Median therapy delivered was highest at university clin-

ics (Md = 300 min/week) and lowest in community teams/outpatient clinics/charities (Md = 60 min/week), see Table 7. Additionally, of 15% who reported they met/exceed NICE therapy delivery, almost 6% worked in inpatient rehabilitation, 4% in acute and the rest in community/university/private/ESD/split across settings. No one in outpatients/charity/other met or exceeded NICE guidance.

2d. Did the amount of therapy provided have an influence on a respondent's definition of intensity?

Those who earlier defined IAT in ways that met or exceeded NICE guidelines provided significantly more therapy per patient per week (Md = 120 min) than those whose definitions did not reach NICE guidance (Md = 60 min). A Kruskal–Wallis test revealed a statistically significant difference in minutes of therapy delivered weekly to the average person with aphasia across four NICE therapy categories reported earlier (Gp1, $n = 47$: Definition did not reach NICE Gp2, $n = 68$: Definition meets or exceeds NICE, Gp3, $n = 49$: Cannot tell (unclear definition), Gp4, $n = 11$: Not a definition (of IAT)/no definition), $\chi^2 (3, n = 175) = 13.79, p = 0.003$.

3a. How do UK SLTs define comprehensive aphasia therapy?

Respondents' definition of CAT was probed first via an open text question 'Could you please enter a definition of CAT?'. There were $n = 163$ respondents who answered this question. Definitions varied widely. Only 4% ($n = 6$) provided a definition which included all three elements of the ICAP definition of CAT. Of these respondents, 10% provided a definition which addressed ICAP criteria 1 (including different approaches and formats), 38% defined comprehensive as targeting both the impairment and activity/participation (ICAP criteria 2) and 18% included patient/family education in their definition (ICAP criteria 3).

3b. What agreement is there amongst UK SLTs on the ICAP conceptualisation of CAT?

When asked multiple-choice questions about the definition of CAT (yes/no/unsure), there was high number of respondents in agreement with the definition of CAT as defined on an ICAP, see Table 8.

TABLE 6 Amount of therapy by geographical region.

Geographical region	Median minutes of therapy provided per PWA per week (range)	n of 175
Northern Ireland	180 (80–300)	11
Northeast of England and Yorkshire	150 (45–540)	12
Greater London	150 (25–360)	31
East of England	127.50 (25–300)	16
More than one area	120 (60–300)	3
Southeast of England	110 (45–225)	19
Northwest of England	100 (30–180)	25
Scotland	90 (50–150)	15
English Midlands	85 (30–200)	14
Wales	80 (30–250)	11
Southwest of England	60 (20–450)	18

Abbreviation: PWA, people with aphasia.

TABLE 7 Amount of therapy by workplace type.

Workplace type	Median minutes of therapy provided per week (range)	n of 175
University clinic	300 (120–540)	4
Inpatient rehabilitation	200 (25–360)	23
Early Supported Discharge team	135 (45–270)	13
Acute	120 (25–300)	49
More than one setting	120 (60–300)	18
Private practice	105 (40–420)	10
Community team	60 (20–240)	46
Outpatient clinic	60 (30–180)	10
Charity	60	1
Other	30	1

TABLE 8 Agreement with ICAP concept of CAT.

ICAP construct of comprehensiveness	Percentage selecting 'yes'	n of 163
Does CAT address different levels of the ICF?	90%	146
Is CAT delivered to more than the PWA (i.e., a family member)	89%	145
Is CAT delivered in both 1:1 and group formats?	80%	131
Does CAT require use of computers?	77%	125

Abbreviations: CAT, comprehensive aphasia therapy; ICAP, Intensive Comprehensive Aphasia Programme; ICF, International Classification of Functioning, Disability and Health.

4a. What types of therapy do UK SLTs offer and how frequently?

Participants reported high use of a variety of different types of aphasia therapy, see Figure 2. A subsequent question asked respondents to select 'the top three aphasia therapy approaches you offer most frequently to your average client with aphasia'. Answers revealed functional language therapy, impairment-based therapy and involvement of family were the three most frequently used aphasia therapy approaches, see Figure 2.

4b. Was there an influence of geographical region or workplace type on type of therapy provided?

Both chi-square analyses of the top three therapy approaches by geographical region and by workplace type were invalid due to the large number of categories involved. No other statistical analysis was possible due to the categorical nature of the data (geographical region/workplace type and type of therapy).

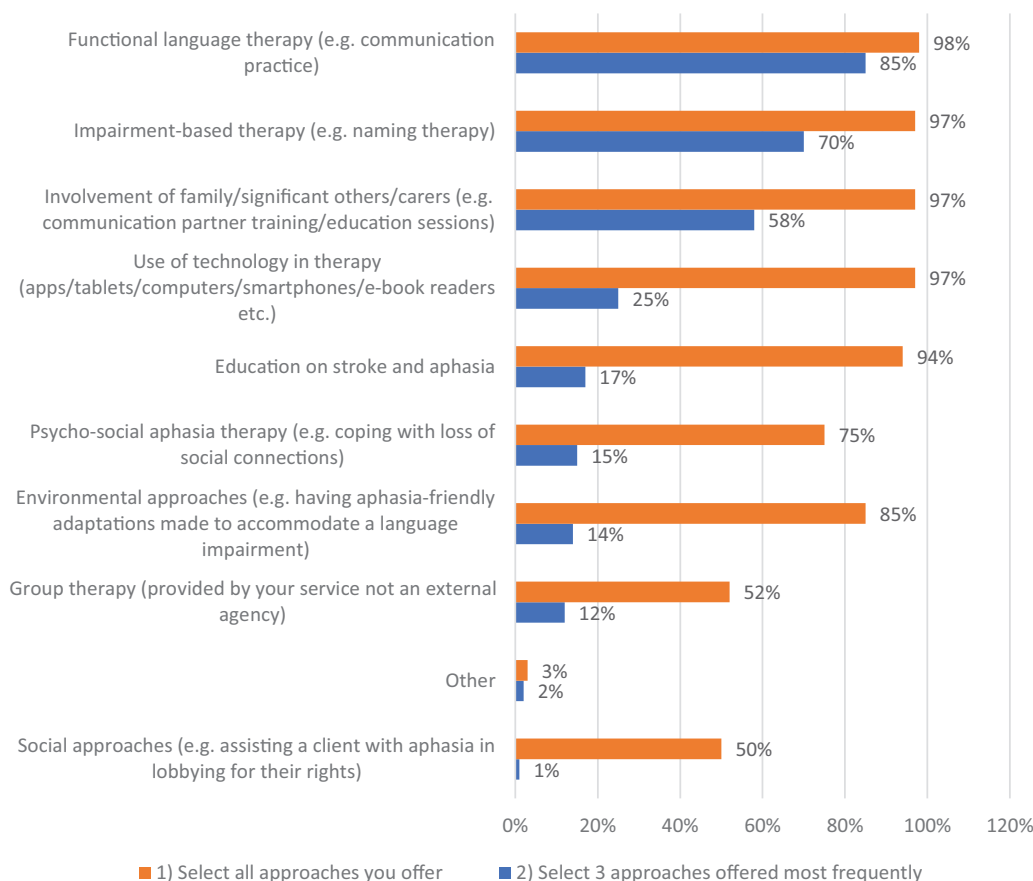


FIGURE 2 Aphasia therapy approaches offered generally and in order of frequency. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1460-6984.12918)]

5a. What are the intrinsic factors UK SLTs consider for service user candidacy for IAT and CAT?

Figure 3 reports the percentage of respondents who ticked 'yes' against candidacy statements for IAT ($n = 183$) and CAT ($n = 154$), and ICAP ($n = 15$) which is discussed later in this paper. SLTs consider people of any age, physical ability and expressive ability candidates for IAT and CAT, but consider having significant fatigue/cognitive impairment key inhibitory factors especially for IAT.

Additional client-related factors relevant to candidacy are noted in Figure 4. Again, the standards for therapy candidacy were higher for IAT. Motivation was the highest voted criterion.

5b. What are the extrinsic factors UK SLTs consider for candidacy for IAT and CAT?

Extrinsic factors necessary for candidacy in either therapy are noted in Figure 5 and reveal much closer agreement between the therapy types, with family/friend/carers

support seen as important. Analysis of free text 'other' responses (offered by 14% of SLTs for intensive therapy) revealed 9% of respondents considered engagement from both client and family important for intensive therapy.

6a. What are the barriers and facilitators to provision of IAT in a UK context ($n = 172$)?

Respondents answered 14 questions each about IAT and CAT, using a 5-point Likert scale from 'strongly disagree' to 'strongly agree'. These questions matched the 14 TDF domains (Cane et al., 2012). The questions asked are listed in Appendix 1 under 'TDF sections'. Figure 6 shows a combination of 'strongly agree' and 'agree' results as a measure of 'overall positivity' for each question and could thus reflect facilitators and barriers. Most SLTs agreed that they had the skills to deliver IAT; it was part of their role; IAT would benefit clients (beliefs about consequences); and there was an evidence base (knowledge). However, only a third agreed they were resourced to deliver IAT and were optimistic that issues around IAT delivery could be solved, and half felt stressed about delivering IAT (emotion).

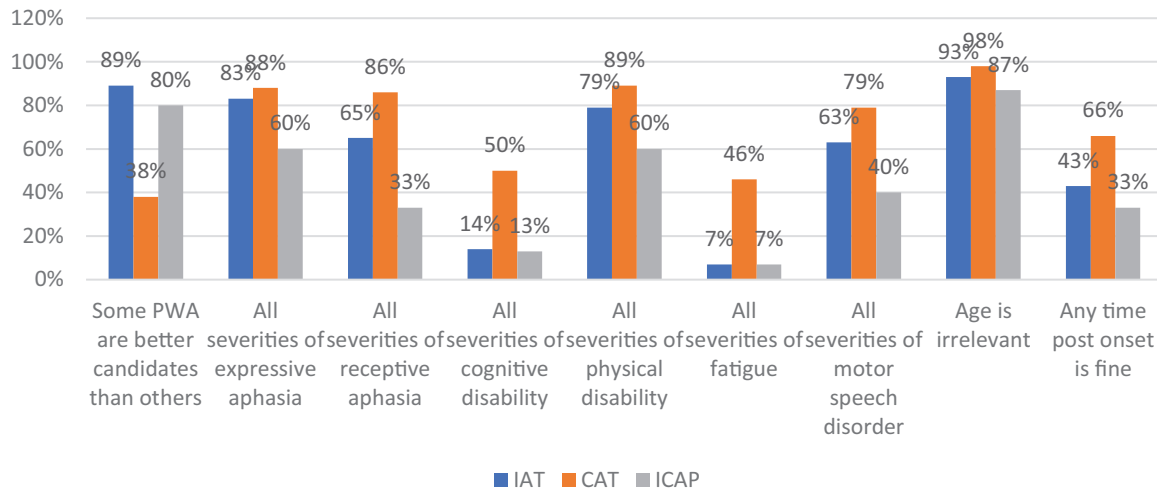


FIGURE 3 Percentage of respondents agreeing "yes" with candidacy statements for IAT/CAT/ICAP. Abbreviations: CAT, comprehensive aphasia therapy; IAT, intensive aphasia therapy; ICAP, Intensive Comprehensive Aphasia Programme; PWA, people with aphasia. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com)]

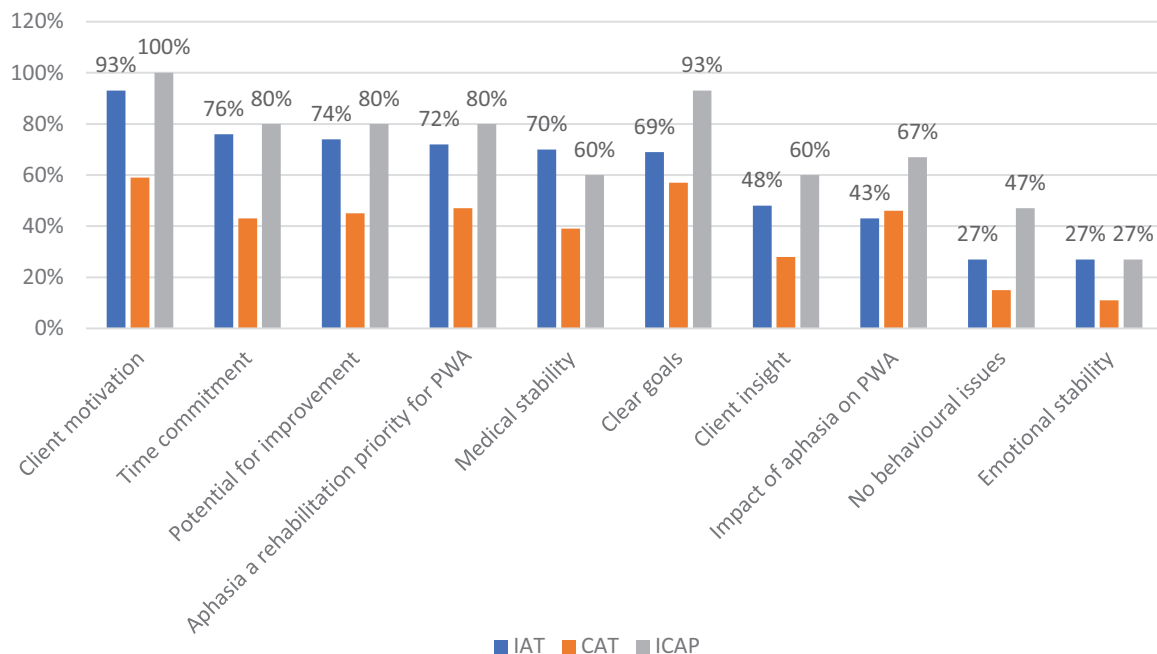


FIGURE 4 Percentages selecting each criterion as necessary for candidacy—a multiple choice question with top 10 answers displayed. Abbreviations: CAT, comprehensive aphasia therapy; IAT, intensive aphasia therapy; ICAP, Intensive Comprehensive Aphasia Programme; PWA, people with aphasia. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com)]

6b. What are the barriers and facilitators to provision of CAT in a UK context ($n = 144$)?

Almost all SLTs agreed CAT was part of their role and identity; was worthwhile for patients (beliefs about consequences); and was rewarding (emotion), see Figure 6. Just over half of SLTs were optimistic CAT delivery issues could

be resolved; agreed they were resourced to deliver CAT; and felt efforts to provide CAT were reinforced or recognised by colleagues (reinforcement). None of the domains represented a barrier as voted by more than 50% of the sample (and as such, there is no subsequent analysis of geographical variation or workplace as is now undertaken for IAT).

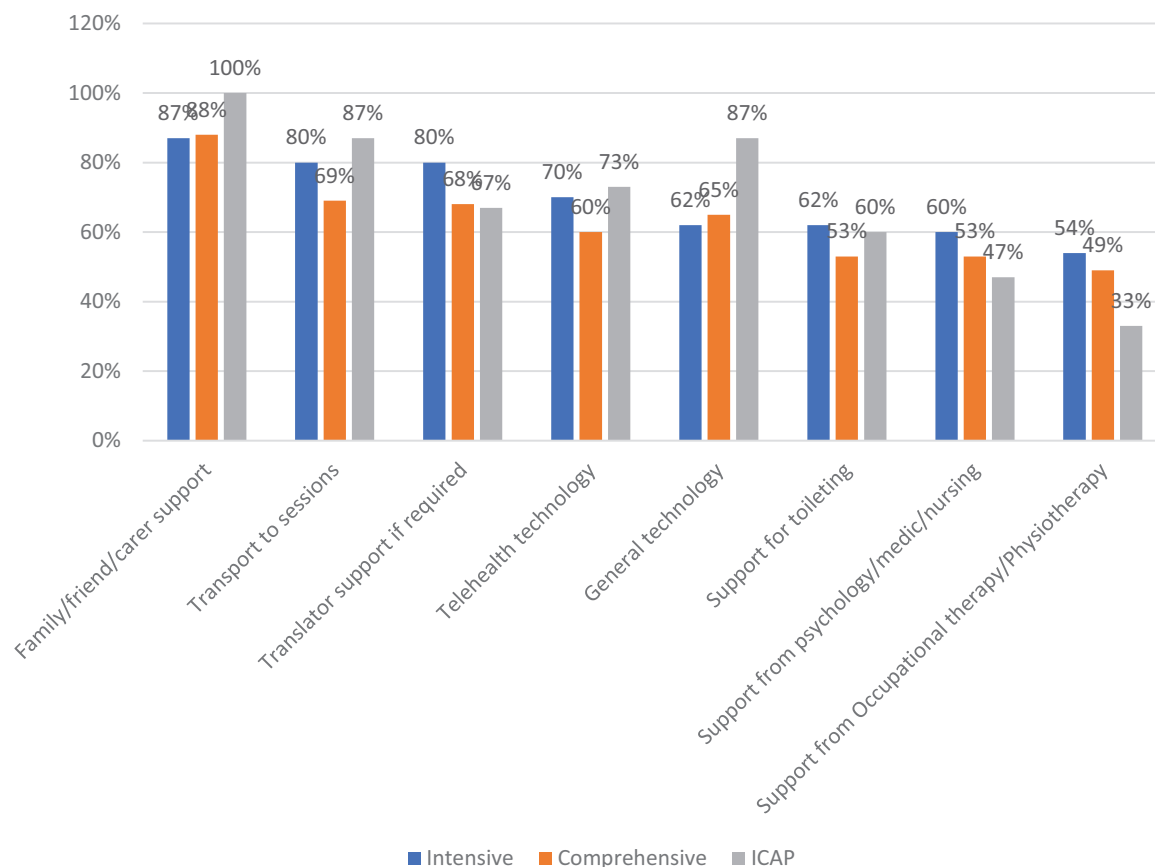


FIGURE 5 Percentage of respondents selecting extrinsic factors needed for therapy from multiple choice options. Abbreviations: ICAP, Intensive Comprehensive Aphasia Programme. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1460-6984.12918)]

6c. What is the influence of geographical region on facilitators and barriers to IAT?

It was not possible to run statistical analysis across geographical regions as they could not meaningfully be collapsed into superordinate categories (e.g., South vs. North of England). A descriptive analysis was conducted whereby answers which were 'strongly agree' or 'agree' were combined to represent 'overall agreement' with each question, and a percentage of overall agreement was calculated from the total number of respondents. The three TDF domains with the lowest levels of agreement were identified as barriers and selected for analysis. The $n = 4$ who worked in 'more than one area' were removed from analysis for simplification of results leaving $n = 168$. Descriptive results revealed regional disparities which varied for each question—see Table 9. Some areas for example, Greater London were broadly positive, compared with for example, Northwest and Southeast of England who were in the bottom three across all domains.

6d. What is the influence of workplace type on barriers to IAT?

The categories other ($n = 1$), university clinic ($n = 3$) and charity ($n = 1$) were removed from analyses as the numbers for each were small and the data were only explored descriptively. There was no clear pattern across workplace types—see Table 10. There was a raw differential between Early Supported Discharge (ESD) and inpatient teams who were in the top three most positive across all domains, compared with those in community who were in the bottom three across all domains.

7. What is the level and extent of ICAP awareness amongst UK SLTs?

When asked 'ICAP stands for Intensive Comprehensive Aphasia Programme, have you heard of the ICAP model?' half of the remaining sample (76/151) answered yes—see Figure 7. These respondents were asked questions on their ICAP knowledge. Most were aware that ICAPS are a mix of

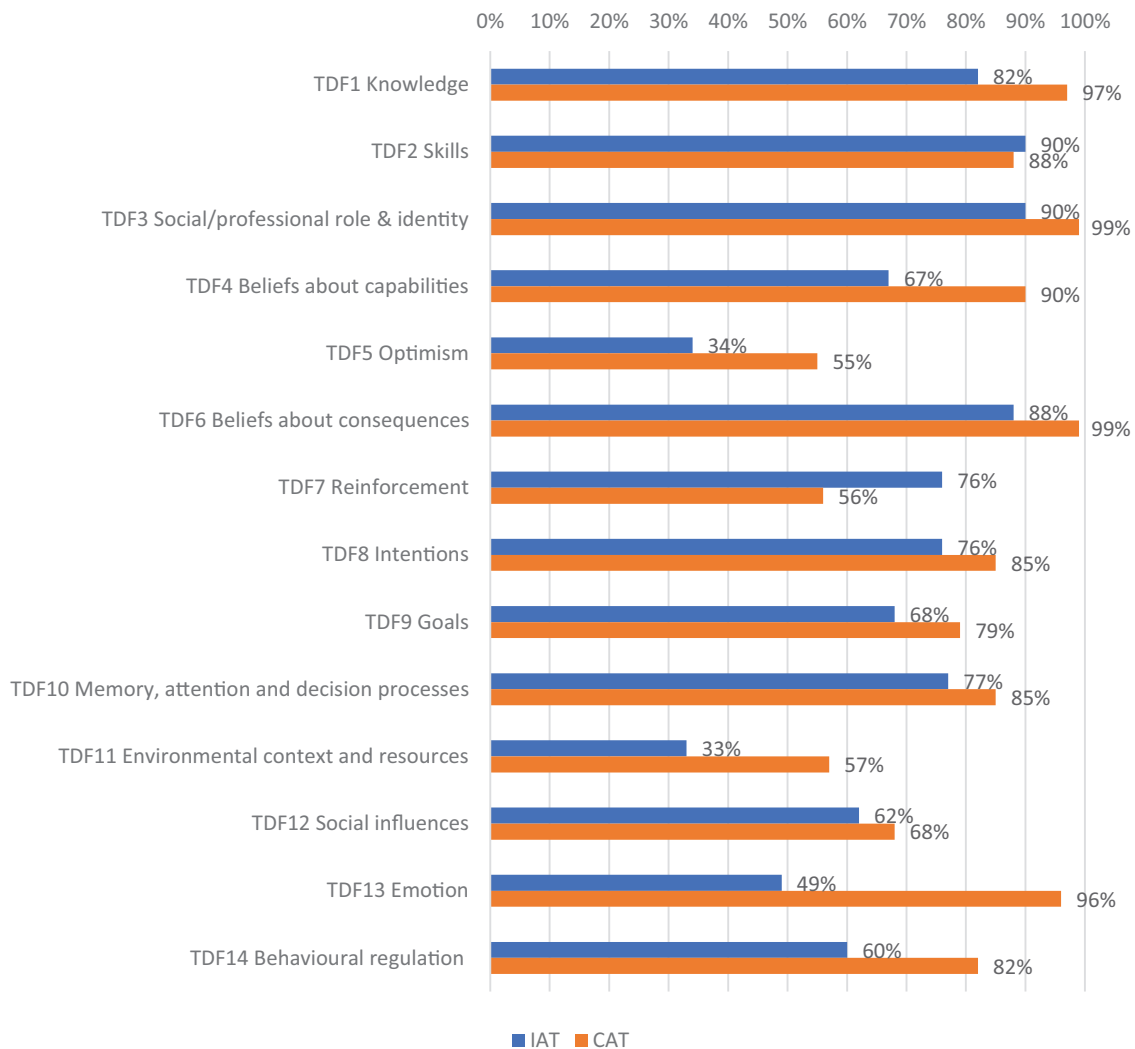


FIGURE 6 Percentage of respondents agreeing/strongly agreeing with statements for each of 14 Theoretical Domains Framework (TDF) domains for intensive aphasia therapy (IAT) ($n = 172$) and CAT ($n = 144$). Abbreviations: CAT, comprehensive aphasia therapy; IAT, intensive aphasia therapy; TDF, Theoretical Domains Framework. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1460-6984.12918)]

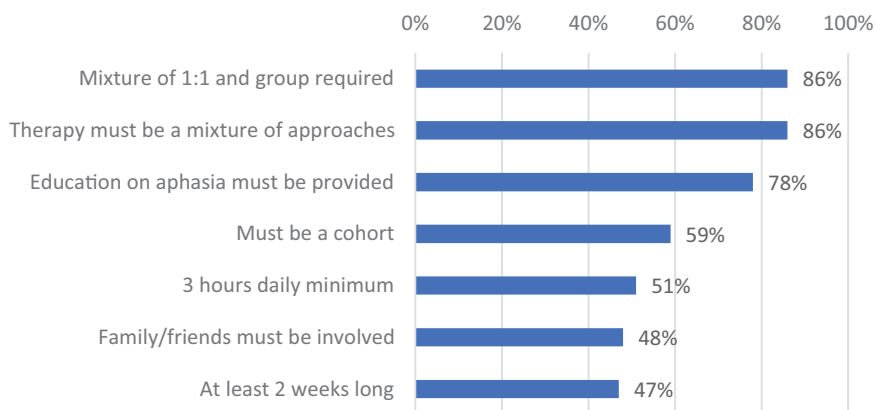
TABLE 9 Variation in barriers to intensive therapy by geographical region.

Percentage of people in each region strongly/agreeing with the TDF questions posed.			
Geographical region ($n = 168$)	Strongly/agree therapy is resourced %	Strongly/agree optimism intensive therapy issues can be solved %	Strongly/agree not stressed delivering intensive therapy %
Northeast of England and Yorkshire ($n = 12$)	67%	58%	50%
Northern Ireland ($n = 10$)	50%	30%	60%
Greater London ($n = 30$)	47%	40%	53%
East of England ($n = 15$)	40%	60%	60%
Southwest of England ($n = 18$)	28%	33%	50%
Wales ($n = 11$)	27%	36%	36%
Scotland ($n = 16$)	25%	25%	63%
Northwest of England ($n = 24$)	21%	21%	38%
Southeast of England ($n = 20$)	20%	25%	35%
English Midlands ($n = 12$)	17%	17%	42%

Abbreviation: TDF, Theoretical Domains Framework.

TABLE 10 Variation in barriers to intensive therapy by workplace type.

Workplace type (<i>n</i> = 168)	Strongly/agree therapy is resourced %	Strongly/agree optimism intensive therapy issues can be solved %	Strongly/agree not stressed delivering intensive therapy %
Early Supported Discharge (<i>n</i> = 12)	58%	42%	58%
Inpatient rehabilitation (<i>n</i> = 24)	54%	42%	67%
Private practice (<i>n</i> = 10)	40%	80%	10%
Acute (<i>n</i> = 49)	29%	31%	55%
More than 1 setting (<i>n</i> = 18)	28%	50%	56%
Community team (<i>n</i> = 42)	21%	21%	29%
Outpatient clinic (<i>n</i> = 12)	17%	17%	75%

**FIGURE 7** Percentage of Intensive Comprehensive Aphasia Programme (ICAP) aware speech and language therapists (SLTs) agreeing on core ICAP concepts (*n* = 73). [Colour figure can be viewed at wileyonlinelibrary.com]

1:1 and groups, that a mixture of therapy approaches must be provided, and that education on aphasia must be provided. Fewer respondents were aware of the desirability to involve family/others and the necessity that an ICAP lasts at least 2 weeks.

8a. What detail is known about ICAP provision in the United Kingdom?

Respondents were provided with the Rose et al., 2013 ICAP definition and asked, 'based on this definition, have you ever been involved in providing an ICAP'. Fifteen confirmed they had and were asked questions 8b–8d. Thirteen SLTs were based in England (six in Greater London, two in the East of England) and two in Scotland. It is likely some SLTs provided intervention on the same ICAP, especially given there was an ICAP running in London at the time of writing. The answers reflect a minimum of seven individual ICAPs throughout the United Kingdom. Fourteen SLTs who were ICAP experienced were based in the NHS and one in private practice; 68% had worked for less than 10 years. Community was the most represented setting at 40%.

8b. What were the views of ICAP-experienced SLTs on ICAP setting?

The 15 SLTs who had taken part in ICAPs were asked which setting was best for an ICAP. From multiple-choice options, community was the most favoured setting for an ICAP (80%); however, outpatients, inpatient rehabilitation, ESD and university clinics were also possible (53%–60%).

8c. What were the intrinsic factors ICAP-experienced SLTs consider for ICAP candidacy?

Respondents' answers indicated stricter criteria for ICAP admission than for other therapies, See Figure 3 for comparison. Answers to specific survey questions which can be found in the Appendix were not displayed in Figure 3 but are outlined here. Of the 15 ICAP-experienced therapists, 80% felt some PWA were better candidates than others for an ICAP. The most important intrinsic factors were cognitive ability and fatigue as 40% felt the ideal ICAP candidate should have no/mild cogni-



tive problems and 53% felt they should have no/mild fatigue.

8d. What were the extrinsic factors ICAP-experienced SLTs consider for ICAP candidacy?

There were higher requirements for client factors and external supports required for ICAPs as compared to IAT and CAT with motivation (Figure 4) and family/friend/carer support (Figure 5) both rated at 100% necessary for ICAP engagement.

8e. What were the views of non-ICAP experienced SLTs on ICAPs?

One hundred thirty-three respondents had no experience of delivering an ICAP. Of these, only 16.5% felt that their service could be reconfigured to provide an ICAP. The rest answered 'no' their service could not be reconfigured (45.9%) or were unsure (37.6%). Of those who felt it was not possible/were unsure about reconfiguration, the main barriers were insufficient staffing (73%) and lack of funder/ commissioner support (41%). Other barriers included unsuitable clients, lack of support from manager/colleagues, limited number of clients for cohorts and a variety of logistical issues, for example, rural location/multidisciplinary team timetabling clashes. Respondents who felt they *could* reconfigure and those who were *unsure* were additionally asked how reconfiguration might be achieved. Solutions included setting up a service from scratch (58%), having students provide an ICAP in the service (53%) and delaying therapy for clients to be seen later as a cohort (35%).

SUMMARY OF RESULTS

Intensity (IAT) Figure 6, Tables 3–7, 9 and 10

Regarding intensity, 78% of SLTs defined intensive therapy *per day* in line with the NICE minimum metric (45 min/day), and 13.2% of SLTs defined it in line with the research ICAP daily metric of 3+ h/day (Rose et al., 2013), 50% of SLTs defined intensive therapy *per week* in line with NICE (3 h 45 min), and 9% of SLTs defined it in line with the Rose et al. research metric (15+ h/week). Total dose of therapy was not investigated. Duration of therapy is not specified by NICE but 97.5% of SLTs defined intensive therapy total duration in line with the Rose et al.

research metric (2 weeks or more). Finally, when quantitative findings are combined (min/day $\times$ days/week) and qualitative definitions also considered, 36%–37% of SLTs defined intensive therapy in line with NICE (45 min/day $\times$ 5 days/week) and 7% defined intensive therapy in line with the Rose et al. ICAP metric (3 h/day $\times$ 5 days/week). An average of 128 min/week of aphasia therapy was delivered per patient. A total of 15% reported they achieved or exceeded the weekly NICE therapy target of 3 h 45 min. Amount of therapy delivered varied based on the UK region and by workplace type. The amount of therapy provided was related to how SLTs defined intensity. SLTs reported they felt skilled at therapy delivery and that IAT was part of their role. These were seen as facilitators to IAT delivery in the United Kingdom. Barriers were lack of optimism that IAT delivery issues could be resolved and lack of resources for its delivery. Descriptive data suggested variations in facilitators and barriers to IAT based on geographical location and workplace type.

Comprehensiveness (CAT) Figures 2 and 6, Table 8

There was wide variation in definitions of comprehensive therapy with 38% reporting comprehensive therapy targeted both impairment and activity/participation levels of language/communication. There was high agreement (77%–90%) from respondents when presented with statements about how comprehensive therapy is defined on an ICAP. Participants offer a wide range of aphasia therapies, but the majority delivered functional language therapy (85%), impairment-based therapy (70%) and involved family and others (58%), thereby meeting two of the four Rose et al. features of comprehensive therapy (in ICAPs). It was not possible to assess the effect of geographical region or workplace type on type of therapy delivered. SLTs felt delivering CAT was rewarding and part of their role—facilitators to CAT delivery in the United Kingdom. Relative barriers were lack of optimism that CAT delivery issues could be resolved and lack of reinforcement from colleagues for delivering CAT.

ICAPs Figure 7

Half of the sample were aware of ICAPs. Those who were aware had relatively good knowledge of some ICAP requirements for example, 86% aware that a mixture of 1:1 and group therapy was required but 51% aware of daily intensity requirement. Fifteen respondents had delivered ICAPs mostly in England (87%) but also Scotland and with the majority in NHS settings (93%). There were 133



who had no experience of ICAP delivery. Of these, only 16.5% felt their service could be reconfigured to provide an ICAP. The rest felt reconfiguration was 'impossible' or were 'unsure' about it. The main barrier cited was insufficient staffing (73%). The top solution for ICAP delivery was to set up a service from scratch (58%).

Service user candidacy for therapy Figures 3–5

Respondents had a concept of the type of PWA who was suitable for the three therapies discussed in this paper (IAT, CAT and ICAPs). They were most lenient on admission characteristics for those attending CAT, followed by IAT, with the most restrictive criteria reserved for those attending ICAPs. Therapists felt participants of all ages were suitable for the three therapies. However, SLTs felt the presence of cognitive disability and fatigue restricted suitability for therapy. Client motivation and support from family/other were seen as crucial for all therapies.

DISCUSSION

Intensity

It is no wonder given the variation reported in research that survey respondents also varied in their definitions of IAT. One third conceived of intensive therapy as meeting or exceeding the minimum metric chosen in this paper (45 min/day $\times$ 5 days/week). Whilst this is a positive finding, the remaining two thirds defined it in a manner that did not reach the minimum metric chosen. Lack of a stable and standard definition of intensity may hinder delivery of IAT. Most SLTs have a concept of intensity that is lower than both the lower standard of 45 min/day $\times$ 5 days/week set by UK clinical guidelines/the SSNAP intensity audit target (which is mandatory for acute stroke services across England/Wales/Northern Ireland), and the higher level espoused by research into IAT. This differentiates SLT opinion from researcher opinion. Why might this be the case? This may be an example of therapists operating using 'mindlines' (internalised guidelines) which guide what they do (Gabbay & Le May, 2011). Work on mindlines arose from Gabby and Le May's ethnographic exploration of the clash between scientific evidence-based practice guidelines/research and why clinicians do not always implement the evidence base in the way researchers desire. Mindlines guide how a clinician thinks. They are established during training and shaped by practice, colleagues and trusted clinical leaders. Clinicians operate in messy complex clinical settings where delivery of 45 min/day of

SLT is not achieved, rather than in more sanitised research contexts with the resource to deliver high-intensity therapy. It is understandable that clinicians may not have time to stay on top of research evidence. Therefore, they are likely to place their trust in their own clinical judgement or that of a valued and trusted clinical leader. Taylor et al. (2018) found that UK intensity guidelines were filtered by stroke clinical leaders (often high banded NHS clinicians responsible for disseminating guidelines among their team). These leaders de-emphasised intensity for three key reasons: (1) They did not feel quantity reflected quality, (2) they felt 45 min/day was unachievable and (3) they wanted to reduce pressure on the lower-banded frontline clinicians for whom they were responsible.

Intensity also includes treatment duration, and the majority of SLTs conceived of IAT as lasting either 4 or 6+ weeks. It is possible that service delivery models influence this (i.e., ESD often lasts for 6 weeks) and that literature shapes this view. For example, a recent systematic review found that of 44 studies of IAT in the chronic stage, the mean duration was 4 weeks (SD 3) (Menahemi-Falkov et al., 2021).

In this survey, an average of 128 min/week of aphasia therapy was delivered per patient. This does not meet NICE guidance (225 min/week) but is much higher than SSNAP data demonstrating that as little as 10 min/day of SLT in the acute setting focused on communication/dysphagia (Mitchell et al., 2021). The fact that 15% of SLTs in this survey achieved or surpassed 3 h 45 min/week is notable. Respondents to this survey came from all clinical settings. Their report of just over 2 h of aphasia therapy a week exceeds previous UK research with similar sample sizes (Bowen et al., 2012; Palmer et al., 2018). It matches previous international research showing therapy provision at 1–5 h a week (Code & Petheram, 2011) or a summary of research reporting that outpatient delivery was rarely more than 2–3 h/week (Pierce et al., 2020).

The weekly intensity of therapy delivered in this survey falls into the lower range studied in a recent review. The RELEASE Collaboration (2022) analysis of 25 clinical trials with individual participant data stated IAT must be at least 2–4 h/week and a total dose of 20–50 h for gains in overall language, functional communication or comprehension. Unfortunately, total dose of therapy was not explored in this survey, but previous UK research suggests a dose of 20–50 h is unlikely in clinical practice after discharge from acute services (Bowen et al., 2012; Palmer et al., 2018). However, the recent VERSE RCT of IAT versus usual care found that a usual care regime of 2.3 h/week (total dose of 9.5 h) 'may be a sufficient therapy regimen to support recovery in the first 6 months post stroke' (Godecke et al., 2021: 567) as it produced the same outcomes on a language battery, naming, quality of life, and depression as higher-intensity



intervention of 5 h/week (total dose 22/h). This study provides support to the level of intensity reported by survey respondents. Nevertheless, the evidence base for IAT is still unclear with potentially contrastive evidence produced.

Amount of therapy provided was related to definitions of intensity indicating that experience may influence thought. On the topics of entrenched practice and de-implementation, Montini and Graham question 'whether worldviews/beliefs lead to practice change or whether changes in practice catalyze changes in worldviews' (2015: 3). The lowest standard of intensity in the survey was 'once a week' which may reflect a constraint these therapists operate within based on their service limitations.

There was an indication in the data that geographical location had an influence on the amount of therapy that was provided. Whilst the numbers within subgroups varied, and there were large ranges, there was some indication of regional variation in length of therapy provided which warrants further investigation in the future including further scrutiny into local factors that may be influencing service provision such as resourcing policies.

There was also an effect of workplace setting. SLTs in inpatient rehabilitation provided substantially more therapy on average than outpatient or community settings, a finding which is consistent with that of other surveys (Manning et al., 2020; Verna et al., 2009).

An analysis of the 14 TDF-framed questions revealed the domains which SLTs rated positively and the domains which were rated negatively. Answers revealed that UK SLTs have the ability/potential to deliver IAT but are constrained by barriers beyond their control. A survey of 63 Australian SLTs also found 'skill' and 'role' to be facilitators for IAT, but unlike this survey the third facilitator was 'optimism' (Young et al., 2018). 'Resources' were a barrier to IAT as in the current study, but additional barriers were 'memory, attention and decision processes' and 'beliefs about capabilities'. Young et al. (2018) found that 'environmental context and resources' was the biggest barrier to implementation of Australian stroke recommendations. Although UK SLTs were not optimistic their service could change to deliver IAT, service-level adaptations could be made to release therapist time. For instance, Clarke et al. (2018) found the amount of time therapists engaged in information exchange (ward rounds, verbal handovers, multidisciplinary team meetings) was the largest contributing factor to why the 45-min therapy target was not achieved.

There appears to be geographical variations in facilitators and barriers of IAT depending on the UK region, but the statistical significance of these variances could not be calculated. Additionally, there appear to be workplace differences in facilitators and barriers of IAT but with a less consistent pattern than regional differences. Those in

community teams experience high levels of barriers across domains, whereas those in ESD and inpatient rehabilitation report fewer issues. This aligns with previous TDF findings of fewer barriers to aphasia therapy delivery in a rehabilitation setting (Shrubsole et al., 2019b).

Comprehensiveness

SLTs were largely unable to generate features defining comprehensive therapy. As with definitions of intensive therapy this is unsurprising as there is no formal definition of CAT in the wider aphasia literature. SLTs surveyed agreed with the ICAP definition of comprehensive therapy. It is worth noting, however, that the content of comprehensive therapy varies from ICAP to ICAP (Monnelly et al., 2021). Group therapy is the first component of comprehensive therapy on an ICAP. The survey data evidenced that group therapy approaches are underused in UK clinical practice despite the psychosocial and peer support benefits which can only be achieved in a group context (Elman & Bernstein Ellis, 1999). If group therapy is underused, delivery of therapy to a cohort is also likely to be affected. The third component of comprehensive therapy on an ICAP is education. Monnelly et al. (2021) found that 'education' was too vague a term to be included in a scoping review of ICAPs and may vary from general information on stroke/aphasia to providing training in specific SLT therapy approaches (Gauvreau et al., 2019). Finally, inclusion of caregivers is essential for the delivery of certain SLT approaches, for example, conversation partner training. However, further rationales for including family members have not been developed (discussed later). In summary, the ICAP definition of comprehensive therapy is a good basis for discussion of what comprehensive therapy should constitute, but clear rationales are required for the inclusion of each component. An interesting avenue for future research would be the development of a definition and suggested content of CAT external to the ICAP model.

An additional issue is the lack of current clinical or research guidelines for CAT. This means that therapy content is likely to be influenced by the local service delivery context which leads to variation. Even if contemporary directive clinical guidelines were in place, their presence may have little impact on clinician behaviour because as Montini and Graham write, 'it may not have been the scientific evidence that established the practice nor sustained its utilization'. (2015: 6). The authors argue that though clinicians may be aware of what practices accord with scientific evidence, 'they often remain confined by a set of structural forces beyond their control and are not able to make changes' (2015: 7).



Therapists offered a range of therapy approaches which aligns with previous research findings (Palmer et al., 2018; Rose et al., 2014). The top three areas of focus were functional language therapy, impairment-based therapy and involvement of family/others. This is a similar finding to another UK study of post-acute aphasia therapy which measured session content by retrospective goal analysis (Palmer et al., 2018). The authors found a primary focus (60%) on rehabilitation tasks (which would mostly fall under impairment-based approaches), a secondary focus (17%) on enabling (roughly classifying as functional therapy), and low levels of family involvement in therapy (percentage could not be calculated). A primary focus on functional therapy parallels UK practice in other domains of stroke rehabilitation. A UK survey of upper limb intervention after stroke found 88% of therapy focused on functional activities (McHugh et al., 2014). A more recent UK survey agreed but found the focus on functional work varied depending on the severity of the impairment (Stockley et al., 2019).

The second most frequent focus was on impairment-based approaches. As in the current survey, a majority focus on functional therapy with secondary focus on impairment-based approaches was found amongst Australian therapists (Verna et al., 2009). However, more recent Australian research shows a primary focus on impairment-based single word expression (Brogan et al., 2020). A focus on impairment-based tasks was also identified in international research on aphasia practices, though an impairment-based focus was more strongly associated with certain countries (Ireland, New Zealand, United States) (Trebilcock et al., 2019).

The involvement of family/others was offered by 97% of therapists reflecting its importance. However, it was in the top three most frequently offered approaches of 58% of SLTs. There is a mismatch between perceived importance of family involvement and the extent to which family are involved in therapy. Gauvreau et al. (2019) found that inclusion of relatives was a 'peripheral clinical activity' occurring 'only under specific conditions and... perceived as optional' by Canadian SLTs (2019: 856). They were more likely to provide them with information about aphasia/communication strategies than specific training, for example, CPT. An Irish survey found variable support available for family members with only 27% of SLTs reporting CPT was available for family (Manning et al., 2020). There are difficulties in involving family members in aphasia rehabilitation including availability and family expectations about level of involvement (Wray et al., 2020) which may be why it is not implemented as often as it is offered. Another possibility is that involvement of family may not be beneficial for PWA depending on family dynamic. Family involvement is core to some approaches

to aphasia intervention for example, CPT, but involvement of family more generally in aphasia therapy is justified by family desires (Howe et al., 2012) rather than evidence base for their involvement. In some therapies, for example, paediatric stuttering, family therapy involvement is mandatory and essential for positive outcomes (Millard et al., 2018). This differs from ICAPs (Rose et al., 2013) and family involvement as an inclusion/exclusion criterion is worth exploring in future.

This survey did not explore factors influencing the therapy approach, an interesting avenue for future research. The data could not be analysed to explore the influence of geographical region or workplace type on therapy approach.

In terms of facilitators for CAT, therapists were overall more positive about CAT than IAT. Delivery of CAT was seen as a core part of their role. This creates an interesting conflict as UK stroke services are rated according to the results of their SSNAP audit which focuses only on the quantity but not the content of therapy. As a result, therapists interviewed by Taylor et al. (2018) felt SSNAP results did not reflect the quality of their service. Taylor et al. also found patients were more concerned with quality and nature of therapy received rather than intensity. A unique barrier to CAT delivery was lack of reinforcement from colleagues. The current survey did not query why SLTs feel unsupported to deliver CAT, and this is an interesting avenue for further exploration. An inflexible work culture (e.g., a prevailing impairment-based ethos) was deemed one reason for lack of support for comprehensive therapy in Trebilcock et al. (2019).

In this survey, the barriers were at an individual level (emotion, optimism) and organisational level (resources, reinforcement). An example solution for individual-level change could be to increase optimism by showcasing and detailing IAT/CAT implementation success stories. However, solutions must also address organisational-level change which is beyond the control of individual SLTs.

Service user candidacy

Respondents had conceptualisations of what type of PWA was best suited to receiving IAT, CAT and an ICAP. Their key concerns irrespective of therapy type were cognitive ability and fatigue. These were the third and fourth most prevalent admission criteria for ICAPs respectively (Rose et al., 2021). There is good reason for SLTs to use cognitive ability as a therapy candidacy criterion for impairment-based therapy given the evidence cognitive ability links to outcomes for anomia therapy (Dignam et al., 2017; Yeung & Law, 2010). Levels of fatigue have been noted by SLTs in 80% of clients with aphasia and increasing fatigue was



felt to correlate with declining performance (Riley, 2017). Brady et al. (2016) noted increased dropout from intensive therapy regimes—aligning with therapist concerns about fatigue. However, a scoping review found insufficient research on post-stroke fatigue and aphasia (Riley et al., 2021) and a recent poster presentation (Pierce et al., 2022) showed that fatigue was not a factor influencing outcomes in the high-intensity VERSE trial. Of interest, fatigue was experienced by SLTs delivering intensive therapy.

Candidacy expectations were lowest for those receiving CAT, climbing higher for IAT and the highest standards were reserved for those seen as suitable for an ICAP. UK SLTs who have provided ICAPs feel candidacy should be restricted to a small subset of the aphasia population, for example, those with milder aphasia. Putman et al. (2007) found that stroke rehabilitation settings with more restrictive admission criteria delivered more therapy. There may be a relationship between admitting those viewed as more ‘able’ for therapy and the ability of the SLT to deliver more intensive therapy. This may explain why ICAP participants have high compliance with therapy (Monnelly et al., 2021) but may reduce the generalisability of positive outcome findings from ICAPs (e.g., Babbitt et al., 2015; Persad et al., 2013) to the wider aphasia population. There is evidence of additional candidacy criteria which may be at play but were not queried in this survey. Gittins et al. (2020) analysing SSNAP data found men received more physiotherapy (PT) and SLT but less occupational therapy (OT) than women; those with very severe strokes received less PT/OT but more SLT; and ethnic minorities and those with premorbid disabilities received less therapy.

ICAPs

Fifteen SLTs had been involved in ICAP provision reflecting a minimum of six individual ICAPs in England and at least one in Scotland. Previously research found two modified ICAPs and one ICAP running in the United Kingdom (Rose et al., 2021), so the numbers reported in this survey reflect growth.

There was low optimism amongst those who had not run ICAPs about the ability to reform services to run an ICAP. This indicates that ICAPs might only be feasible in a limited number of settings, and this is supported by data demonstrating that ICAPs do not typically run in mainstream clinical settings (Rose et al., 2021) and highlighting the barriers to implementation of intensive/comprehensive services in international clinical settings (Trebilcock et al., 2019). There is, however, very encouraging data from this survey demonstrating that ICAPs can be run in NHS settings. There is much to be

learned from the services where this has occurred. This is being explored in Australia where an ICAP which evolved in a research setting is being adapted for mainstream clinical implementation (Shrubsole et al., 2022).

Limitations

This survey asked SLTs to estimate average weekly intensity received by each of their clients with aphasia but did not ask about average length of therapy in weeks. Gaining duration of therapy in weeks would have enabled a calculation of average overall therapy dose which would have made an interesting comparison with the literature. The survey used the NICE metric (given to survey respondents after initial questions on definition of intensity), however, this metric is not used in Scotland—though respondents in Scotland are advised to defer to NICE guidance in the absence of contemporary clinical guidelines. The survey gave multiple-choice options for therapy approaches delivered (with an option for free text responses for other approaches). This limits the interpretation possible from therapies delivered most frequently as the survey omitted examples given in other surveys, for example, offering ‘cognition’ as a named approach as in Tierney-Hendricks et al. (2022). Due to the amount of some categorical variables (e.g., geographic location, workplace type), statistical analysis methods could not be applied to all questions. The phrasing of TDF questions in the intensive and comprehensive sections was slightly different. This was necessary as the therapy types are different but means direct comparisons of the findings for IAT and CAT are problematic. There was only one question posed for each TDF domain again due to burden of survey, but multiple questions for each domain would have been preferable.

Implications

Implications for research: The survey showed that aphasia provision in the United Kingdom is predominantly low dose. One response to this could be to focus pragmatic research effort on identifying treatments that are effective within this dosage. Similarly, there may be candidacy constraints which could be highlighted, so that we can identify the PWA who are most likely to benefit from low-dose regimes.

The risk of this is that we conduct trials that produce negative outcomes, because insufficient therapy has been provided. Therefore, aspirational goals should be retained. While not fully conclusive, existing evidence suggests that intensive therapy achieves better outcomes (RELEASE Collaborators, 2022). Further high-dose trials



could bolster this evidence. While continuing research into high-dose therapy, it is important to be mindful of the gap between research and practice. Indeed, our survey respondents were unclear in their definitions of IAT and identified significant barriers to achieving it in their practice; and such barriers extended to the adoption of ICAPs. One response is to increase resources. But we also need to explore service reconfigurations. Shrubsole et al (2019a) discuss the need for SLTs and researchers to meet midway, where clinicians advise researchers on how evidence-based interventions may be implemented in their specific setting and where researchers design interventions suited to the local context (e.g., with resource limitations). There is a need to think creatively about ways in which larger doses can be provided to PWA for example, through delegated models involving student SLTs, health-care assistants and volunteers. Recent evidence from 2249 PWA supports the use of self-managed aphasia-specific apps in boosting intensity of provision and maximising a range of language/cognitive gains (Cordella et al., 2022), so their integration in increasing intensity warrants further inclusion in research.

It would also be useful to increase awareness of comprehensive therapy approaches through their integration in clinical guidelines and via university curricula teaching to SLT students.

Implications for client management include considering what aphasia therapy is best provided in a low-intensity service (i.e., what therapy approaches are still effective at low intensities). Examples of therapies delivered at the average weekly intensity in this survey can be found from 24 trials in the supplemental material of the RELEASE paper (RELEASE Collaborators, 2022). A focus on delivering impairment-based therapy in a known low-intensity context may need to be challenged given the lack of evidence to support this practice. It may be necessary to challenge one's own perceptions of who is suitable for intensive or CAT; and explore possible solutions to increase intensity of therapy within service constraints (e.g., reducing time spent in information exchange, increasing role for family/others/technology/and independent practice in therapy delivery).

Implications for service delivery include a recommendation that regions delivering low-intensity services liaise with regions delivering high-intensity services. This will allow for peer support across aphasia services, sharing good practice and advice and possibly supporting service to develop an argument for increased therapy resourcing. Dissemination of services and therapists delivering high intensity and CAT and running ICAPs in NHS services is crucial to encourage others. This can be done via national CENs and Integrated Stroke Delivery Networks in England. Teams may also reflect on the type of aphasia therapy

they deliver and whether there are means to increasing intensity and comprehensiveness in their setting.

SUMMARY/CONCLUSION(S)

The SLTs surveyed in this study had a wide variety of experience and were regular aphasia practitioners representative of those working in aphasia in the United Kingdom. A combination of research evidence and clinical experience shows that it is fundamentally difficult to define IAT. There is a gap in the type of aphasia therapy that is being delivered regularly in a UK context. While functional and impairment-based approaches are common, comprehensive approaches such as groups are underused despite being evidence based and providing a range of social and economic benefits. The growth in ICAP delivery in a UK context is worthy of attention. Solutions to increasing the intensity and comprehensiveness of aphasia therapy in a UK context should be sought. These may include adaptations that would make implementation of the ICAP model in UK clinical practice feasible.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The survey data set cannot be shared due to client confidentiality but katie.monnelly@city.ac.uk can be contacted for queries about the data.

ORCID

Katie Monnelly  <https://orcid.org/0000-0002-3112-9830>

Madeline Cruice  <https://orcid.org/0000-0001-7344-2262>

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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