Face and content validity and clinical utility of the Structured Observational Test of Function (SOTOF) from the perspective of patients with a neurological diagnosis and a stroke rehabilitation multi-disciplinary team.

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The candidate confirms that the work submitted is her own and that appropriate credit has been given where reference has been made to the work of others.

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Abstract

Introduction

The Structured Observational Test of Function (SOTOF) is a standardised, valid and reliable test for older people with neurological conditions (Laver and Powell 1995), assessing occupational performance in four activities of daily living and associated neuropsychological deficits. The 2nd edition enhanced the dynamic element and introduced a scored graduated mediation protocol (Laver-Fawcett and Marrison 2016). This study aimed to explore the face validity, and aspects of content validity and clinical utility of the 2nd edition.

Method

Two sample groups were recruited: in-patient participants (≥ 60 years) with neurological diagnoses; and members of a stroke rehabilitation multi-disciplinary team (MDT). Patient participants undertook a semi-structured interview after completing SOTOF. MDT participants either participated in a semi-structured focus group or an online survey. Interviews and the focus group were audio-recorded, transcribed verbatim and analysed through thematic analysis. Survey data was analysed using descriptive statistics and thematic analysis.

Results

Patients (N = 10) agreed with more positive than negative rated statements related to their feelings about SOTOF. The majority recognised the purpose of the test. Themes were the: impact of the assessor on test experience; importance of the appropriateness of assessment level of difficulty; value for patients learning about their abilities / disabilities; and the realisation that patients may not absorb as much information as thought. MDT participants (N = 19) took part in the focus group (n = 11) or survey (n = 8). Themes were the: reliance on verbal handover; usefulness of scores to communicate results; lack of MDT's awareness of SOTOF; and the usefulness of SOTOF to inform practice.

Conclusion

This study has contributed to the evidence base for the 2nd edition of SOTOF, establishing good face validity from patients' perspectives and potential for clinical utility with the MDT. Content validity could not be established from the MDT perspective.

Table of Contents

Page number

Figures

Chapter 1 : *Introduction and Literature review*

1.1 Introduction

This study examined the face validity and content validity of the Structured Observational Test of Function (SOTOF, 2nd edition; Laver-Fawcett and Marrison 2016) following changes that were made to the first edition (Laver 1994). Firstly, patients with neurological diagnoses were assessed using the SOTOF and then interviewed to gather their experiences, views and opinions of undertaking the assessment to investigate face validity. Secondly, the views of the multi-disciplinary team (MDT) working with these patients were gathered through a focus group and on-line survey to obtain views on how the SOTOF influenced their professional working, thus investigating the content validity and clinical utility of the SOTOF. This chapter will begin with the definitions of face and content validity and clinical utility. It will also introduce the SOTOF, a consideration of the importance of assessing for cognitive impairment for those with neurological conditions will then follow. It will also discuss the recommendations and use of standardised assessments and how MDTs use the assessment results to impact their practice. Finally the chapter will highlight person centred care when assessing patients.

Definitions:

"Face validity concerns the acceptability of a test to the test-taker, while content validity concerns the appropriateness of the content of the test as judged by 'professionals'…" (Bartram 1990, p77).

Haynes et al. (1995) described content validity as 'the degree to which elements of an assessment instrument are relevant to and representative of the targeted construct for a particular assessment purpose' (p2). A key health policy driver within the UK is an understanding of service users' perspectives (Department of Health (DoH) 2001). This further supports the importance of face and content validity studies.

Clinical utility is broadly described by Lesko et al. (2010) as the relevance and usefulness of an intervention, assessment or program in patient care.

The SOTOF was developed for older adults (age 60 years +) with possible neurological disturbance (Laver and Powell 1995). It is a standardised test that

provides a detailed description of occupational performance in activities of daily living (ADL) and associated neuropsychological deficits. SOTOF offers a structure for occupational therapists to observe and evaluate performance of four activities of daily living (eating, washing, drinking and dressing) and generates information related to underlying perceptual, cognitive, sensory and motor performance components. The SOTOF provides a profile of the person's skills and deficits. It can be used to signpost the need for further assessment and help inform goal setting and intervention planning.

Cognitive impairment is a frequent finding amongst those with neurological conditions. Foltynie et al. (2004) suggested that approximately 75% of people with Parkinson's disease experience cognitive or emotional impairment. In individuals over the age of 60, there is a global prevalence of dementia estimated at 3.9%; in Western Europe this increases to 5.4% (Grand, Caspar and MacDonald 2011). It is known that particularly towards the later stages of dementia, performance in activities of daily living (ADLs) are often affected, mostly due to the cognitive decline (Steinberg et al. 2006; Lyketsos et al. 2002). Pohjasvaara et al. (1997) highlighted that cognitive impairment is one of the major consequences post stroke and can significantly impact on ADLs; for example, the ability to dress, feed and bathe oneself. Perceptual deficits are a highly disabling deficit post stroke and is present in at least 30% of stroke survivors (Barrett et al. 2006). Perceptual deficits contribute to reduced quality of life (Franceschina et al. 2010), functional deterioration (Ting et al. 2011), longer lengths of hospital stay and slow recovery (Gillen et al. 2005). According to research using the Mini-Mental State Examination (MMSE) (Folstein et al. 1975), a standardised cognitive screening tool, the prevalence of cognitive impairment three months post stroke ranges from 24% to 39% (Douiri, Rudd and Wolfe 2013); however, the same population, measured using comprehensive neuropsychological test batteries showed a prevalence of up to 96% (Gutierrez et al. 2011). This significantly highlights the importance of using thorough standardised testing rather than screening tools alone; it has been shown that cognitive screening tools, such as the MMSE, are not sensitive enough to detect mild cognitive impairment and executive functioning deficits (Pendlebury et al. 2010).

1.1.1 Standardised assessment in neurological practice

It is recommended in the National Institute of Health and Care Excellence's (NICE 2013) guideline that occupational therapists should carry out a detailed assessment on patients who have had a stroke, using valid, reliable and responsive tools before planning a treatment programme. The initial assessment of a stroke patient should assess for a range of impairments in order to inform and direct further assessment and treatment. The NICE (2013) guideline also focuses on the need for a full assessment including a cognitive assessment (assessing attention, memory, spatial awareness, apraxia and perception), all areas of which the SOTOF assesses. The Royal College of Physicians' (RCP) stroke guidelines (Intercollegiate Stroke Working Party (ISWP) 2016) also recommend occupational therapists should be assessing a person's safety and independence with personal activities of daily living and this should be done using a standardised assessment tool. Legg et al. (2006) concluded that people, after a stroke, who had occupational therapy targeting personal activities of daily living, performed better and had a reduced risk of poor outcomes compared to those without occupational therapy input. The ISWP guideline (RCP 2016) highlighted that standardised screening tools to assess cognition such as the Montreal Cognitive Assessment (MoCA; Nasreddine et al. 2005) are appropriate to provide an overview of a person's cognitive functioning but can fail to detect more specific problems, therefore, patients benefit from a more thorough and comprehensive standardised assessment that assesses for a range of cognitive and perceptual deficits. Van Muster et al. (2018) concluded that rather than using neurological examination for upper limb function, incorporating ADL tasks into daily clinical practice may be more valuable.

The NICE (2018) guideline suggested that, when using cognitive assessments with patients who have dementia, clinicians should use a validated, brief and structured cognitive tool; they also recommended this should be part of an initial assessment to assess the impact these deficits have on the patient's daily life. The NICE guideline (2014) for the management of adults with MS suggested that if a person has any problems with cognition they should be offered a comprehensive cognitive assessment and treatment. Similarly, patients with Parkinson's disease should be offered occupational therapy to assess cognitive

and motor impairment and provide appropriate interventions, particularly focusing on the impact of impairments on independence in ADLs (RCP 2006; NICE 2017). The Royal College of Occupational Therapists (RCOT 2010) recommended, in their best practice guidelines, that people with Parkinson's disease should be screened for cognitive impairment; this could either be by functional assessment and / or standardised assessments. For optimal outcomes, adults with brain injury should have early intervention and cognitive rehabilitation should have a clear focus on functional activities (Scottish Intercollegiate Guidelines Network 2013). The SOTOF is a thorough, standardised assessment, focusing on functional activities that can be done early following a stroke, to identify cognitive and perceptual deficits and, thereby, enable specialist multidisciplinary teams to start intervention early. It can also be used with people with other neurological conditions, such as Parkinson's disease, dementia and head injury.

1.1.2 MDT use of assessment results

The second focus for this study was to explore the usefulness of the SOTOF's results for other professionals and their clinical practice. For neurological conditions, such as dementia, it is suggested an integrated multidisciplinary approach to diagnosis and management should be utilised owing to the complex range of cognitive, physical, social and emotional difficulties (Grand, Caspar and MacDonald 2011). Particularly for those with dementia, Cohen-Mansfield (2001) and Turner (2005) highlighted the importance of multidisciplinary team (MDT) approaches and individualised treatment plans to aid successful interventions. In this study, occupational therapists used the SOTOF to assess a person's cognitive, perceptual, sensory and motor deficits following a neurological diagnosis. The occupational therapist then shared their findings with the specialist multidisciplinary team in MDT meetings. Raine et al. (2014) developed recommendations with regards to MDT meetings, one of these was that teaching between professions should be part of MDT meetings; particularly if it was relevant to patients' care. Greenhalgh et al. (2008) completed a study exploring the challenges of an MDT scoring patients using outcome measures as part of their weekly MDT meeting. It was highlighted that different professions work with patients in different ways and had different perspectives on a patient's difficulties. This made it challenging to score some

concepts of the measures, cognitive problems being one of these. They discussed assessment results as part of their MDT meetings, to share knowledge from their areas of expertise; however, when scoring the outcome measures together, it was found that they usually stayed within their professional boundaries. For example, physiotherapists would report on a patients' mobility and the occupational therapists would report on their self-care and cognition. Verhoef et al. (2007) also found that developing a 'shared picture' of a patient was a challenge for an MDT to be able to then establish common treatment goals. It is important to recognise how an MDT communicates and benefits from each profession's unique skills and knowledge.

1.1.3 Person-centred care when assessing patients

The focus of occupational therapy is enabling a person's occupational performance and overcoming difficulties owing to their disability and / or illness (RCOT 2019). Person centred care is a key aspect of occupational therapy theory, it is essential for a therapist to understand a person holistically; and this involves a shift towards inclusivity and equity in the patient–professional relationship (Hughes et al. 2008). Person centred care has been recognised to benefit those patients with long term conditions, such as neurological conditions (Eaton et al. 2015). During a study by Wood et al. (2010), interviews were conducted with people who had experienced a stroke. They found that, when discussing rehabilitation and quality of life, participants specifically emphasised the importance of individualised and meaningful occupations. A patient should be seen as an equal in the assessments they undertake and in the development of their treatment programmes (National Ageing Research Institute 2006; Royal College of General Practitioner (RCGP) 2014). Dynamic assessments, such as the SOTOF are recognised to be person centred (Toglia 2011). Egan et al. (2010) discussed the difficulty of this in current health systems, owing to the fact that health systems are often focused on medical issues and basic functional concerns. Ekman et al. (2011) also suggested when under pressure, health systems tend to revert to a more disease-centred care approach. Moore et al. (2017) emphasised several barriers to person centred care; in line with the previous studies mentioned, they found traditional practices and structures, for

instance, the biomedical model, being a significant barrier. Power relationships and time constraints were another two main barriers identified. However, the time constraints were at the development stage of integrating person centred care into every day practice and it was recognised that once embedded, using a person centred approach saved professionals' time owing to patients taking more responsibility for their own care and therapy goals. Armstrong (2008) demonstrated that using a person centred approach to set goals can improve motivation, engagement and provide empowerment. A key element to person centred practice is to provide patients with the skills and knowledge they require to empower them to self-regulate and take control of their own therapy, goals and progress (Bailey 2019). Bailey (2019) found that a key barrier to increasing engagement in ADLs was patients' limited use of self-regulation strategies. Studies with stroke patients have found an increase in ADL participation when people were provided with interventions aimed at increasing one's self-regulation (English et al. 2016; Paul et al. 2016; Kessler et al. 2018).

The World Health Organisation (WHO) developed a framework to promote the use of a person centred approach (WHO 2007), referring to it as a core competency of health workers (WHO 2005) and recognising it to be a key aspect of quality care (WHO 2006). To maintain a person centred approach, it is necessary for both health professionals and researchers to understand patients' perspectives of engaging in practice, whether this be assessments, goal setting or intervention programmes. Connell et al. (2018) emphasised the need for patients to be involved in the development of a tool but recognised this was often not done and / or not reported on. This highlights the importance of exploring the face validity of assessment tools, for health professionals to truly understand how patients feel when undertaking assessments such as the SOTOF.

1.2 Literature Review

This literature review will introduce the development of the SOTOF 1st edition and explore the content and face validity and clinical utility studies for the original version. It will then discuss the studies which have informed the development for the SOTOF 2nd edition and explain the additions and changes that were made. In particular, the inclusion of the graduated mediation protocol

(GMP). Next, studies on the SOTOF 2nd edition, including those which explored content validity and clinical utility will be reviewed. The literature review will finally discuss face and content validity and clinical utility in relation to current literature on other occupational therapy / allied health ADL and cognitive / perceptual assessments.

1.2.1 SOTOF (1st edition)

The development of the four SOTOF ADL tasks was based on detailed activity analysis, occupational therapy assessment practice, literature review and critique of other assessments (Laver 1994). Each ADL task is broken down into test items which represent discrete behaviours which are scored using a dichotomous 'able' or 'unable' rating. Standardised instructions are provided for all test items. If the person is unable to successfully complete an item then the therapist is guided to use a diagnostic reasoning process to form hypotheses regarding the underlying cause of dysfunction. Suggested prompts, cues and further assessments are outlined for items in the SOTOF instruction cards. The most common neuropsychological deficits associated with the failure to perform a test item are provided on the SOTOF instruction cards to aid initial hypothesis generation (Laver and Powell 1995). In addition to recording whether a person has been able or unable to successfully complete the test item, the therapist also records qualitative information related to performance, hypothesised deficits and the person's response to any prompts or cues used.

The SOTOF involves the tester watching the person perform five sub-tests: a screening assessment; and four personal activities of daily living (eating, washing, pouring and drinking, and dressing). The screening assessment is administered to identify the person's basic level of functioning and to determine whether he / she meets the criteria needed to attempt the ADL tasks. However, this may not be necessary if the person's basic level of functioning is considered suitable by the assessor (Laver-Fawcett and Marrison 2016). An instruction card is provided for each of the five sub-tests. Instruction cards are used to guide test administration, scoring of observed behaviour and the identification of any underlying neuropsychological deficits. The client's performance is recorded directly on to record forms during testing, which

provide a profile of the client's skills and deficits. The tester indicates on the score sheet whether the client is able to perform the task independently, what skills (for example, reaching, sequencing) are intact, what problems are evident (for example, perceptual, motor) and what the underlying dysfunction (for example, ideomotor apraxia, agnosia) might be. Record forms are reviewed and results from all five sub-tests are drawn together and summarised on a neuropsychological checklist at the end of testing. This provides a profile of neuropsychological function / deficits and summarises the person's occupational performance in the four ADL areas.

Previous studies established construct and criterion-related validity, face validity, clinical utility and internal consistency, and acceptable levels of test-retest and interrater reliability for the SOTOF screening assessment, the four activities of daily living (ADL) tasks and the neuropsychological checklist (Laver 1994; Laver and Powell 1995). The content and face validity and clinical utility studies (Laver 1994) used two sample groups; occupational therapists and patients.

Firstly, the aim of the 1994 study was to obtain the view of occupational therapists related to the content and clinical utility of the SOTOF, this study did not seek the views of the MDT. A letter requesting volunteers was submitted to the editor of the British Journal of Occupational Therapy. Forty-four participants completed the study; participants studied the SOTOF manual, administered the test to at least one patient with stroke and then completed a paper survey which asked questions about the content, utility and relevance of the test. Questions pertaining to content validity explored therapists' perceptions of the constructs and behaviours addressed by SOTOF and the neuropsychological deficits, which SOTOF could be used to highlight in patients who have had a stroke. Questions pertaining to clinical utility were related to the test manual, test materials, length of time to administer, appropriateness of the test for the patient group, test induced anxiety and level of expertise required to administer the test. A self- administered questionnaire with twenty questions was used to collect the data and this produced qualitative data. Eight constructs emerged as the content base of SOTOF. These were: perceptual function; sensory function; motor function; cognitive function; language; performance of Activities of Daily

Living (ADL); visual function; and auditory function. The three most frequently identified performance components were perceptual, sensory and motor functions. These three emerged as the most frequently mentioned component for both therapists' perceptions of what was tested by SOTOF and those deficits which could be highlighted by the test when used to assess older patients with stroke. Therapist participants reported that SOTOF had been used to identify the following deficits: sensory deficit (n = 10); motor function (n = 10); spatial relationships (n = 6); tactile discrimination (n = 6); right/left discrimination (n = 5); neglect/inattention (n = 4); visual field loss (n = 3); body scheme (n = 3); and dressing apraxia (n = 3). Overall, SOTOF appeared to have good content validity from the perspective of occupational therapists administering the test. With regards to clinical utility, 54.5% of therapists indicated the test manuals and forms were easy to understand and to follow, 11.4% found it difficult to understand the instructions. 9.1% reported finding the instructions and protocols difficult to understand and follow, with 2.3% finding it impossible to follow. 52.3% indicated the protocols were fairly easy to follow and half of the therapists found the SOTOF forms easy to complete, with 8.8% finding it difficult to complete the forms. 72.7% of therapists found the materials easy to obtain and appropriateness for use (for example; easy to store, clean and carry). With regards to length of time for administration, the majority of participants took 60 minutes or less to complete the full test.

Secondly, to establish face validity, 40 patient participants undertook the SOTOF and answered questions concerning their opinion and experience of the test. Patients were recruited from occupational therapists' caseloads, they were required to have a primary diagnosis of stroke and be 60 years of age or above. The patient questionnaire was administered in a semi-structured interview by a member of the MDT. The questions pertaining to face validity addressed: their perceptions of the purpose of SOTOF; what they thought was tested; whether the SOTOF tasks were activities the patients would normally engage in; and whether patients minded being asked to do the SOTOF tasks. There were seven questions in total, six were open-ended and resulted in qualitative, descriptive data and one question was designed differently. With that question, patients were provided with five pairs of words (for example: easy/difficult) which might describe their experience of undertaking SOTOF. They were added

to the 1994 study following a pilot of the first qualitative semi-structure interview. Patients provided predominately positive comments and brief descriptions (e.g. ‘it was fine’) to the pilot. Therefore, to encourage participants to be able to provide negative, as well as positive, feedback on their experience of the test and to explore a wider range of potential feelings which might occur when undertaking an assessment the pairs of descriptive words and the two point ‘yes or no’ response scale was added. This meant the patient could provide an affirmative answer to a negative concept, e.g. to finding the assessment stressful.

The questionnaires were distributed by post, therefore, a limitation, as it was not feasible to train and supervise interviewers or monitor the interactions during the face validity interviews. The majority (95%) of the patients felt the SOTOF tasks represented things they would normally do. None of the patients gave negative responses when asked the open question about what they thought of the SOTOF. When asked what patients felt the SOTOF was assessing, 75% gave general descriptions regarding testing ability or function, 7.5% gave more specific feedback, for example, their ability to see and/or feel. Responses to the paired words were generally positive, 87.5% found it useful and interesting, 80% found it enjoyable, 75% found it relaxing, only 15% reported the test to be boring, 12.5% to be stressful and only 7.5% to be upsetting. Overall, SOTOF appeared to have good face validity with the patients for whom the test was designed.

SOTOF can be used as both a criterion-referenced and a norm-referenced test. The SOTOF is beneficial to use as an assessment of body function and structure for occupational therapists working with older people with neurological conditions (Clarke et al. 2001; College of Occupational Therapists (COT) 2003). Letts and Bosch (2001) provided a critique of the SOTOF, highlighting the strong link to occupational therapy theory and clinical reasoning processes, SOTOF’s usefulness for adults with neurological impairments and its ability to evaluate activities of daily living skills. They critiqued the evidence base related to SOTOF’s internal consistency, inter-rater reliability, test-retest reliability, content validity, concurrent and construct validity, face validity and clinical utility and indicated each of SOTOF’s evaluated psychometric properties were good or acceptable (Letts and Bosch 2001). Although acceptable levels

for test re-test reliability were established (Laver 1994), SOTOF was not easy to apply as an outcome measure because it did not provide an overall score. To evaluate clients' performance over time therapists had to examine changes in individual SOTOF test items; rather than having a total score that reflected the person's overall test performance. Douglas, Letts and Liu (2008) rated the levels of SOTOF's reliability and internal consistency as adequate and noted that advantages of SOTOF were: the low cost; that it can be used as an initial screening assessment because of the short administration time; and that it can be used 'before the client is able to mobilise' (p.24). McArthur and Spalding (1997, p.501) commented that 'it is evident that SOTOF has been developed after extensive research' and 'the assessor is presented with a high standard of information, record sheets and cue cards to assist in the administration process'. They considered SOTOF a useful 'standardised assessment of neuropsychological deficits of elderly clients' that used 'basic ADL tasks which are familiar to both client and therapist', required 'minimal equipment' and was 'comprehensive in its information' (p.501). They stated that the 'comprehensive glossary, reference list and a list of further assessments' might assist therapists to 'gain a full understanding of the implications of the assessment results' (p.501). However, they noted that, although for many test items additional prompts were provided, these were 'not consistent across the assessment format' (p.501).

Normative standards, for the time taken to undertake the four ADL tasks and for responses to items requiring the person to provide a verbal description, were established. The SOTOF was found to discriminate between patients with neurological impairment and healthy older adults (Laver 1994; Laver and Powell 1995). The SOTOF (1st edition) has a dynamic assessment element which draws on a diagnostic reasoning process (Rogers and Holm 1991). Although Laver and Powell (1995) never referred to SOTOF as a 'dynamic assessment', therapists administering the SOTOF use prompts and cues, which Toglia (2011) recognises as an important element of dynamic assessment.

1.2.2 SOTOF (2nd edition)

A literature based, first stage content validity study (Laver-Fawcett and Marrison 2016) led to further development of SOTOF's dynamic assessment component,

drawing on the appraisal of four dynamic assessment tools: the Executive Function Performance Test (EFPT) (Baum and Wolf 2013); the Dynamic Lowenstein Occupational Therapy Cognitive Assessment – for Geriatric use (DLOTCA-G) (Katz et al. 2011); the Contextual Memory Test (CMT) (Toglia 1993); and the Learning Potential Assessment Device (LPAD) (Feuerstein, Falik and Feuerstein 1995). Further development also drew on wider review of literature related to dynamic assessment. It was clear there was potential to strengthen and formalise the SOTOF's dynamic assessment component. The four assessment tools were explored and critiqued in the development of the SOTOF graduated mediation protocol (GMP).

The SOTOF 2nd edition now comprises a formalised dynamic assessment component using a six-level graduated mediation protocol (GMP) and rating scale (see Appendix 1). It was decided to develop a GMP to be applied to all test items across the four SOTOF ADL tasks (Marrison and Laver-Fawcett 2016). The term 'mediation' was chosen, because therapists can mediate between the client and the task (Missiuna 1987) using a number of different strategies, including cueing, prompting, assisting, modifying and demonstrating. The SOTOF six level GMP was developed by predominately applying the EFPT's graduated cueing instructions (Baum and Wolf 2013), the DLOTCA-G's graduated prompting schedule (Katz et al. 2011) and the principle of co-active assistance (Sanderson and Gitsham 1991). The protocol introduces a hierarchical and structured way of distributing different forms of mediation. SOTOF phase one administration remains standardised and the dynamic assessment (phase two) is applied to SOTOF test items the person is unable to do. If a client is unable to successfully perform part of a task, the GMP can be utilised to guide the therapist to provide relevant prompts, cues, modification, demonstration and / or assistance. The required level is then recorded by the assessor in the 6-level rating scale on the scoring form (see Appendix 2). On the record form the assessor can document any further relevant information, such as communication difficulties, fatigue or pain the client may experience, the environment and / or distractions which could impact on performance (Laver-Fawcett and Marrison 2016). Once the tasks have been completed, scores are added and recorded in the total score for graduated mediation box in the record form. As in the SOTOF 1st edition, the neurological checklist and

summary scores (NCSS) can be utilised to categorise a clients' ability and deficits which are addressed by the SOTOF.

The SOTOF record form was updated to incorporate scoring for the 0-5 level GMP. This scoring system was influenced by the method used to score the EFPT (Baum et al. 2008). The item scores are totalled for each of the screening assessment and the four SOTOF ADL tasks, (the higher the score, the more guidance / assistance required). These scores are then converted to percentages to allow comparison between the tasks (because the tasks do not all have the same number of test items). Updated instruction cards were developed, providing examples of prompts / cues / modifications / assistance for each test item on the four ADL tasks for levels 1 – 4 of the six point SOTOF GMP. An additional section was added to the summary parts of the record forms to prompt therapists to comment on the persons' learning potential, a key element of a dynamic assessment approach (Hadas-Lidor 2011; Katz et al. 2012), and provide information on the most effective form of mediation to support future assessments, interventions and goal setting. The end of the neuropsychological checklist has been updated in line with the introduction of the six level GMP and the summary of performance is now recorded in a table near the front of the form. The therapist records the score which represents the highest level of mediation required for any of the test items in each of the four ADL tasks. An additional section for the SOTOF manual was written to provide guidance on using the GMP, the revised record form and the neuropsychological checklist.

A stage 2 content validity study involving review by an occupational therapy expert panel (Annis et al. 2017) and a clinical utility study have been completed on the SOTOF (2nd edition) (Barcroft et al. 2017). Annis et al. (2017) used a purposive sampling method to approach 25 potential expert participants, the five of those who completed the survey came from four different countries (Australia, Canada, Ireland and USA). The aim of this study was to elicit the views of a panel of experts in order to evaluate the formalised dynamic element of the SOTOF 2nd edition. A cross-sectional, mixed method online survey was used to collect data, the closed questions were analysed using descriptive statistics and the qualitative responses were analysed by question. Four out of the five participants agreed the SOTOF 2nd edition was easy to interpret and

appropriate for use within occupational therapy practice. Although a small sample size, this sample represented occupational therapist from a variety of countries with varying cultures, therefore, providing promising results that the content of the SOTOF would still be acceptable in some other countries.

For the clinical utility study conducted by Barcroft et al. (2017), seven occupational therapists completed an online survey including rating scales and open questions. The sampling was purposive and involved circulating a recruitment email to the College of Occupational Therapists specialist section in older people. The occupational therapists worked in a variety of clinical settings, for example; in-patient hospital setting; community setting; and a care home, six of the participants worked for the NHS and one was independent. The sample included a range of band five, six and seven occupational therapists. The SOTOF 1st edition took on average 55 minutes to complete (Laver and Powell 1995) which compared favourably to the well-established standardised Assessment of Motor and Process Skills (AMPS) (Fisher and Jones 2011) which has been reported to take on average 30 to 40 minutes to complete; this is considered a reasonable duration time (Hitch 2007). However, the clinical utility study on the SOTOF second edition by Barcroft, Cuddy and Laver-Fawcett (2017) indicated SOTOF took on average 47 minutes, suggesting that the additional elements added to the second edition did not impact on its overall duration. The Barcroft et al. (2017) study acknowledged its limitation of being a small sample size of occupational therapists (N=7), suggesting a focus group may have produced more in-depth information (Barcroft, Cuddy and Laver-Fawcett 2017). A survey was utilised to collect data in their study which may have caused self-selecting bias due to the small sample; the views of the occupational therapists that received the SOTOF but did not then undertake the survey were not represented, meaning the results may not reflect the target population (Kumar 2014). Barcroft, Cuddy and Laver-Fawcett (2017) stated all participants reported the GMP to be useful, and the assessment to be useful to inform intervention plans, clinical reasoning and decision making. There were other strengths reported such as' the in depth nature of results and ease of accessibility.

The evidence for the face and content validity and clinical utility of this additional GMP and related scoring is limited, therefore, further justifying the need to establish the face and content validity and clinical utility of the SOTOF 2nd edition

This thesis will now briefly discuss face validity, content validity and clinical utility in relation to the current literature. A wider literature search was first undertaken and then the researcher undertook more specific literature searches to examine the evidence base for four other assessment tools: The Assessment of Motor and Process Skills (AMPS; Fisher 1995); the Functional independence Measure and Functional Assessment Measure (FIM+FAM, Turner-Stoke et al. 1999); the Performance Assessment of Self-care Skills (PASS, Holm and Rogers 2008) and the Executive Function Performance Test (EFPT, Baum and Wolf 2013). These four assessments were chosen as relevant comparisons to SOTOF because they were also developed for similar groups of patients and are all standardised assessments that use observation of ADL assessments like the SOTOF.

1.2.3 Face validity

Although, it is seen as important to maintain a person centered approach both within clinical practice and research, there are few face validity studies completed on assessment tools (Connell et al. 2018). The face validity of many assessments currently available are based on the judgements of researchers and health care professionals, rather than input from the individuals undertaking the test (Staniszewska et al. 2012; Wiering et al. 2017). Administering a test with poor face validity may cause the person to feel test anxiety, may cause a negative impact on rapport with the therapist and may cause the person to misunderstand the purpose of the test (Laver-Fawcett 2013). Evidence has shown AMPS has excellent test-retest reliability and internal consistency specific to stroke (Douglas et al. 2008; Poulin et al. 2013) and is evaluative and allows the occupational therapist to identify change (Golledge 2006; Fioravanti et al. 2012); however, a literature search indicated that there was no evidence of a face validity study. The PASS is a valid and reliable tool used to assess

occupational performance in ADLs (Holm and Rogers 2008; Rogers and Holm 2014), however, a literature search found no evidence reported on its face validity. The UK FIM+FAM has been validated for people with brain injury and those undertaking neurorehabilitation (Turner – Stokes and Siergert 2013) and is a valid tool to assess functional independence in patients who have had a stroke (Nayar et al. 2016). Although, there is no evidence specifically relating to the face validity of the FIM+FAM, the FIM was piloted at 11 centres (Keith et al.1987) and face validity was determined using an expert panel to establish the inclusiveness and appropriateness of the items (Granger et al. 1986). One study was located which explored the face validity of the EFPT. A study by Cederfeldt et al. (2011) aimed to evaluate the EFPT's face validity when translating the English version to a Swedish version. The study recruited ten occupational therapists who answered questions about the clinical utility of the EFPT such as time use, cultural relevance and the clarity of the EFPT. Owing to the expert panel's results, some adaptations were made due to cultural differences. However, there was no evidence following a literature search that any further face validity studies have been completed.

There are studies focusing on patients' perspectives of undertaking interventions / rehabilitation programmes but very few studies on patients' perspectives of undertaking a standardised assessment. For instance, Nair and Lincoln (2013) completed a study which explored patient experience but this was of a rehabilitation programme using semi structured interviews. However, Barnett et al. (2015) completed a face validity study on a pictorial assessment tool which assessed locomotor and object control skills with children, the children were asked at the end of the test-retest what their understanding of what was happening in each picture to determine face validity. Klein et al. (2019) recognised that studies exploring patient experience are key to uncover the bigger picture rather than focusing on quantitative data, which largely concentrates on impairment level outcomes.

Exploring patient experience provides the opportunity for improvements to be made to an assessment tool. It is important to recognise and understand how a patient feels when undertaking an assessment to provide health professionals with insight into his / her function. For example, if a person reported finding the

assessment very stressful, the results obtained might be impacted by stress rather than providing a clear picture of function. Understanding people's experience of undertaking SOTOF might ultimately help to improve person centred care and the patient's experience, at what can be a significantly challenging point in their lives.

1.2.4 Content validity

In order to ensure occupational therapists are following evidence based practice it is vital that the assessment tools that are used are valid and reliable (COT 2013; Law and McColl 2010). Content validity is the aspect of validity which ensures the test represents how well the test measures what it is intended to measure. Often, to assess content validity, a panel of people who are judged to be experts in the related field of assessment may rate each item's relevance. The AMPS reflects the International Classification of Functioning, Disability and Health (ICF) (World Health Organisation 2001), which Chan et al. (2008) suggested functional assessments should be based upon. Although, after a literature search revealed no explicit evidence of a study establishing the content validity of the AMPS. There was, however, evidence of predictive validity (Fisher 1997; McNulty and Fisher 2003), concurrent validity (Bruininks et al. 1985; Robinson and Fisher 1996) and construct validity suggesting AMPS can differentiate between multiple sclerosis and healthy adults (Doble et al. 1994) and between patients with stroke and healthy adults (Bernspang and Fisher 1995). Although, there is no evidence specifically relating to the content validity of the combined FIM+FAM, the FIM was created based on the results of a literature review of published and unpublished measures and expert panels. The FIM was then piloted at 11 centres (Keith et al.1987) and content validity was determined using an expert panel to establish the inclusiveness and appropriateness of the items (Granger et al. 1986), 114 clinicians participated, at this pilot phase 30.7% felt there needed to be further items added to the FIM and these recommendations were reviewed by the project staff. Excellent concurrent validity for the FIM was established by Hsueh et al. (2002) and Kwon et al. (2004). Predictive validity of the FIM has been thoroughly evidenced and shown positive results (Corrigan et al. 1997; Stineman et al. 1998; Ween et al. 2000). Although no specific content validity study has been completed with the

EFPT, it was developed based on Baum and Edwards' (1993) Kitchen Task Assessment, which had content validity established (Baum and Edwards 1993). However, the Kitchen Task Assessment was primarily developed for use with people with dementia. Concurrent validity of the EFPT by comparison with the AMPS showed adequate to excellent correlations (Cederfeldt et al. 2011). Baum et al. (2008) established construct validity with a sample group of mild to moderate patients with stroke in comparison to healthy adults.

1.2.5 Clinical utility

When selecting which assessments to use, occupational therapists should ensure they take the tool's evidence base into consideration so they know that their assessment and results are valid and reliable (Laver-Fawcett 2014). Therapists should prioritise spending time to critically appraise potential standardised measures to use in practice (Laver-Fawcett 2014). Although, Law et al. (2000) reiterated the importance of considering the clinical utility of an assessment during test development, Bowyer et al. (2012) highlighted that there were few studies of clinical utility, also recognising that there was no accepted method of how clinical utility should be studied and built into the process of assessment development. Criteria of clinical utility or usefulness include such things as: ease of use; reasonableness of time required to complete assessments; clarity of the procedure for administration (Toomey et al. 1995); the acceptability of the cost compared to potential value gained from its use; requirement for training to administer; and the information collected to have value (Laver-Fawcett 2014).

A literature search did not identify evidence of reports on the AMPS' clinical utility with older adults; however, a study was undertaken by Payne and Howell (2005) on the clinical use of the AMPS with 33 children, they wanted to examine what range of ages and range of diagnosis the AMPS would be useful for. The results indicated that all deficits and impacts on function were clear from the AMPS. The therapists in the study found the AMPS to be particularly useful for older children and useful for a range of children typically referred for occupational therapy. Although two studies, Baum et al. (2008; 2017) mention clinical utility of the EFPT in their article titles, the concept is not fully discussed

or established within these papers. There was no evidence of clinical utility being examined for the PASS or the FIM + FAM following a literature search for evidence.

1.3 Aims and Objectives

Aim: To explore the face and content validity and clinical utility of the SOTOF 2nd edition

Objectives:

1. To explore the experiences of people with neurological diagnoses (e.g. stroke, head injury, Parkinson's Disease, multiple sclerosis) undertaking the SOTOF 2nd edition. This objective is related to face validity.
2. To explore the perceptions of people with neurological diagnoses (e.g. stroke, head injury, Parkinson's Disease, multiple sclerosis) on the purpose of SOTOF 2nd edition. This objective is related to face validity.
3. To explore the perceptions of the staff working in a stroke rehabilitation multi-disciplinary team on the content of SOTOF. This objective is related to content validity.
4. To explore if staff working in the stroke MDT consider the SOTOF scoring form and summary of results useful for their practice. This objective is related to clinical utility.
5. To explore if the staff of the stroke MDT consider the SOTOF useful for informing goal setting in rehabilitation and treatment plans. This objective is related to clinical utility.

1.4 Chapter summary

This chapter has introduced the study, discussed the use of standardised assessments and the rationale for increasing occupational therapists' use of standardised tools. This chapter has also explored how the MDT work together and share assessment results. It has emphasised the importance of face and content validity and clinical utility studies to support person centred care. SOTOF 1st edition and the changes made to develop the 2nd edition have been explained. Face validity and content validity and clinical utility were previously evaluated and established for SOTOF (Laver 1994) and a further study is required following the changes made for the 2nd edition. Therefore, the next

stage was to establish the face and content validity and clinical utility from the perspective of patient's and explore the usefulness of the assessment results for the practice of the multi-disciplinary team.

Chapter 2 Methodology

2.1 Introduction and paradigm

This chapter will explain the mixed method, cross sectional design used for this study and discuss the two sample groups. The inclusion and exclusion criteria will be explained, and the author will discuss the recruitment, data collection and data analysis approaches used. This chapter will also discuss rigour, trustworthiness, ethics, anonymity and confidentiality. The methodology for this study used a pragmatic paradigm as a mixed methods approach was used, Tashakkori and Teddlie (1998) and Creswell (2003) associate the mixed methods approach with a pragmatic paradigm as it uses both quantitative and qualitative methods that best address the research question and allow the researcher to study areas of interest. Allmark and Machaczek (2018) described pragmatism as a problem–oriented philosophy that views the best research methods as those that most effectively answer the research question. This may often involve the use of both qualitative and quantitative methods as this allows the researcher to utilise a variety of strategies to answer the research question (Allmark and Machaczek 2018). As the aims of this study involve exploring lived experiences, this study also has an interpretivist paradigm, using methodologies such as interviewing and focus groups (Cohen and Crabtree 2006).

2.2 Design

This study used a mixed method, cross sectional design. A cross-sectional design was chosen as participants would be selected based on an inclusion and exclusion criteria and this study is a one-time measurement of exposure and outcome, this type of design is used for population-based surveys (Setia 2016). This design is known as descriptive research, researchers do not manipulate the variables and they are used to describe what is happening at the current moment (Cherry 2018). Cross-sectional designs: can be conducted somewhat faster; are usually inexpensive; are useful for designing further studies; allow researchers to look at several characteristics at one time; can be repeated periodically: and are useful for planning, monitoring and evaluating (Setia 2016 and Cherry 2018). However, with this being a one-time measurement it may be difficult to develop causal relationships and can be prone to bias, highlighting the importance of interpreting the associations from this type of design and analysis (Setia 2016). A mixed methods research design combines elements of

both qualitative and quantitative approaches to add depth and breadth of understanding to a study and to expand and strengthen a study's conclusions and thus contribute to published literature (Johnson et al. 2007 and Greene 2007). Greene et al. (1989) developed five purposes for mixed methods research, highlighting the benefits of its use. This includes: triangulation (the corroboration of results from different methods); complementarity (enhancing clarification of the results from one method with the results from another method); using the results from one method to support development of the other method; the addition of new perspectives of frameworks; and finally, to extend the breadth and range of inquiry by the use of different methods (Schoonenboom and Johnson 2017). Owing to this study exploring experiences and views, the ability to extend the breadth and range of inquiry would be beneficial. In 2006, Bryman (2006) articulated an enhanced description of rationales for mixed methods research using Green et al's. (1989) work as a foundation. Additional to Green et al's. (1989) purposes, Bryman (2006) suggested this approach: enhances the integrity of the findings, adding credibility; allows for qualitative data to illustrate quantitative findings; improves the usefulness of the findings to practitioners; and enhances the diversity of views. Creswell and Plano Clark (2011) acknowledge that stand-alone qualitative quantitative methods have their limitations. For instance, stand-alone qualitative studies it is difficult to replicate studies and it is difficult to apply conventional standards of reliability and validity due to the subjective nature. With stand-alone quantitative studies large sample sizes are often needed for accurate analysis and they limit the options for participants to provide in-depth information. In qualitative research there is a range and diversity of methods that can be used, with varying quality reports in relation to validity and rigour, however, within healthcare qualitative methods are appropriate for exploring a persons' views and opinions that affect health and well-being (Smith et al. 2011). It is suggested that complex research questions are better understood when using a mixed-method approach (Creswell and Plano Clark 2011).

2.3 Sample

There were two sample groups: the patient participants; and the MDT participants. This study used a convenience / purposive sampling method. It was predominantly a purposive sample, including people who had undergone

the SOTOF assessment, however, there were elements of convenience sampling in that they were easily accessible on the stroke rehabilitation ward. Convenience sampling suggests participants are usually easily accessible, located close and are part of a group (Sharp and Woolliams 2011; Kumar 2014 and Aveyard et al. 2011). Purposive sampling is used when the researcher wants to select those individuals that have had exposure or experience of the phenomenon of interest (Aveyard and Sharp 2013), in this case, for the patient participants they were all undertaking the SOTOF and were individuals who had had a recent stroke or other neurological diagnoses. For the MDT participants, they all had exposure to working with the stroke MDT in an inpatient ward where the SOTOF was being implemented. This method was cost effective, time efficient and targeted the ideal population of patients with neurological diagnosis in an inpatient setting and MDT members. Using a snowballing sampling approach would not have been suitable due to the longer recruitment time, lack of control over sample size and area covered (Kumar 2014) and the fact that this type of sampling is more suitable when the group of participants being sought is relatively hidden e.g. using personal contacts to identify other potential participants (Aveyard and Sharp 2013). It is not expected that one participant who has recently had a stroke would be aware of others to nominate for the study.

As the occupational therapists were implementing the SOTOF as an assessment into the stroke unit at the hospital, there were also a group of patients who undertook the SOTOF as part of their standard care but who did not meet the inclusion criteria for the study and, therefore, were not part of the patient sample for the study. These patients' SOTOF results, along with the study's patient participants' SOTOF results, were shared with the MDT. During the focus group MDT participants were, therefore, asked not to discuss any patient's specific SOTOF results but to share their opinions related to the SOTOF results and use on the ward in general.

2.3.1 Sample group 1 (patient participants):

The study required a minimum of 10 and a maximum of 35 patients to take part. A minimum of 10 was decided upon due to WHO (2017) suggestion that qualitative research studies, for example using an interview data collection method, should have at least 10 participants. A formal sample size calculation

was not undertaken for this study, this study did not involve the testing of hypotheses or examination of relationships between quantitative variables, therefore, a power analysis was not required in this instance. In addition, qualitative data was predominant in this mixed-methods study and the quantitative data collected (within some of the survey questions and the rating scales embedded into the patient questionnaire) obtained only nominal or ordinal data and was analysed using descriptive statics. Factors, such as cost and time, in addition to consultation with the COSMIN guidelines were considered when identifying the desired sample size for this study. The COnsensus-based Standards for the selection of health Measurement Instruments (COSMIN) checklist manual (Mokkink et al. 2012: p31) stated that no standards were developed for assessing face validity because 'face validity requires a subjective judgement'. The COSMIN checklist (Terwee et al. 2012) stated that sample sizes below 30 for psychometric studies are poor. However, sample sizes for qualitative studies using interview and focus group data collection methods tend to be smaller than those for quantitative psychometric studies (Dickerson 2006). The minimum desired sample was 10 participants and recruitment was to be undertaken until data saturation was considered to have been achieved, up to a maximum of 35 participants. Data saturation is a tool used for ensuring that adequate and quality data are collected to support the study (Walker 2012).

This sample size decision had been influenced by several other factors: the usual through-put of patients who might meet the inclusion criteria in the stroke service over a 3 - 4 month period, as informed by the lead investigator's knowledge of working in the stroke unit at the Hospital; and the time constraint for undertaking this study.

Inclusion criteria for patient participants:

- 60 years of age and above (owing to the SOTOF 1st edition originally being developed for this population and this would allow comparison).
- Diagnosis of neurological condition
- Be an inpatient at the hospital where the study was being conducted (in line with ethics approval and location of lead researcher)

- Had been identified by an occupational therapist (either the researcher or a colleague) as benefitting from undertaking the SOTOF as part of their assessment in the inpatient ward setting and had undertaken the SOTOF.
- Be able to understand and communicate in English. This was because the SOTOF is written and undertaken in English and the researcher did not have funding for a translator.
- Individuals who have the capacity to decide to participate in this research and therefore consent to participating in keeping the guidance laid down by the Mental Capacity Act 2005 and can consent either verbally (audio taped consent) or in writing. (Ongoing verbal consent was gained throughout the data collection process, before the SOTOF was administered and before the face validity interview was undertaken).
- Considered medically stable and suitable for therapy as determined by a clinician
- Gross functional use of at least one upper limb and hand to reach and manipulate objects used in the SOTOF test (e.g. cup, jug, towel, soap, spoon)

2.3.2 *Sample group 2: Multi-disciplinary team (MDT*)

An MDT is established on the stroke rehabilitation ward and comprises doctors, nurses, physiotherapists, occupational therapists, speech and language therapists and rehabilitation assistants. The study aimed to recruit at least one member of each profession to take part in the focus group to get a varied opinion from different levels of expertise and experience.

Inclusion criteria for staff participants:

- Be part of the stroke multi-disciplinary team
- Work directly with patients who have neurological diagnoses

2.4 Data collection methods

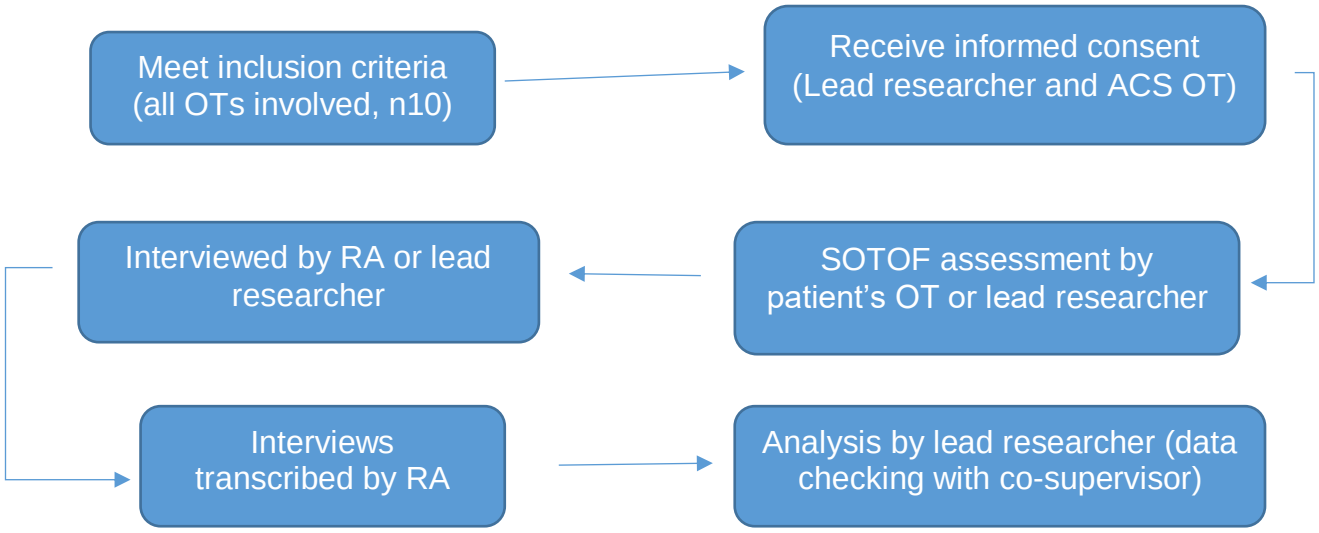
2.4.1 Patient participants

It was decided that demographic data such as age / gender / level of education would be useful to find out if perceptions of SOTOF differ due to a persons' age, gender or level of education. This data was collected to explore whether the SOTOF had adequate face validity, it allows the researcher to compare and contrast with previous studies and / or future studies with different samples. For instance, if a similar study was completed and the results were significantly different, it would allow the researcher to investigate if this was due to demographical differences.

The patient interviews took place within 24 hours of completion of SOTOF in a quiet therapy room on the ward, therefore, a familiar space for the participant, where there was no telephone and a sign was placed on the door to avoid interruptions, ensuring privacy and reassurance. Interviews were audio-recorded and lasted on average 30 minutes. The interviews were conducted by the research assistant or research supervisor to reduce the risk of bias, the research assistant had training with the researcher supervisor prior to conducting the interviews, this ensured he understood why he was asking the particular questions and to ensure he was not going to lead the participants. The supervisor and RA would not be completing the assessment with the patient, therefore, the patient participants did not have the same person completing the SOTOF and then the interview. It was considered that it would be easier for the participant to provide a negative or non-favourable feedback to an interviewer who had not undertaken the SOTOF with them. The training also allowed the research assistant to develop interview skills, for instance, the ability to probe appropriately, how to manage when questions are not answered and how to support the patient group to allow them every opportunity to provide their feedback.

Below is a diagram to illustrate the pathway a patient participant would take through this study.

Figure 1: Pathway of a patient participant



Key: OT (Occupational Therapists), ACS OT (Advanced Clinical Specialist Occupational Therapist), RA (Research Assistant)

2.4.2 Development of the patient semi-structured interview

The design for the patient participants involved a semi-structured, mixed methods interview. The interview questions (see appendix 3) used in this study were based on Laver's (1994) face validity study on SOTOF (1st edition) to allow comparison of results. The qualitative aspect of the interview schedule was informed by a phenomenological viewpoint. Some questions were open and designed to explore the person's views and experience of undertaking the SOTOF. Others were closed and a Likert rating scale was used. The qualitative and quantitative data was collected concurrently within the same interview, both data sets were equally valued. This approach was used to allow the researcher to understand the meaning of another persons' description of undertaking the SOTOF and to hear their experiences and meanings described through language (Giorgi and Giorgi 2003 and Davidsen 2013). Phenomenology is most useful when the researcher wishes to find out about an individuals' experience of an event (Aveyard and Sharp 2013). The interview gives the participants the opportunity to answer questions, concerning their opinion and experience of completing the SOTOF. The following study explored the patient

experience of cognitive rehabilitation programmes; das Nair and Lincoln (2013) used semi structured interviews to gather experiences of undertaking a memory rehabilitation programme and found this approach useful and suitable for their aim of exploring patient experience. This approach was used rather than a self-administered questionnaire, as interviews tend to have a higher response rate, higher completion rate and lower cognitive burden (Bowling 2005), it is more personal and there is an opportunity to gain more detailed and in-depth data. The interview was audio taped on a digital recorder to increase rigour and trustworthiness by ensuring all data was captured and the researcher was not reliant on the interviewers' notes. An interview approach has been shown to be useful and effective for face validity studies previously (Barnett et al. 2015). A semi-structured approach was decided upon to allow the researcher to gather richer and more detailed data, as this approach gives the participants freedom to express themselves as they wish, it gives the researcher opportunity to probe participants to expand on their answers (French et al. 2001). Although structured interviews tend to be quicker, easier to replicate and are associated with a high level of reliability (French et al. 2001), it was decided that for this study it was important not to restrict the questions and thereby risk interesting data being lost. With structured interviews the participants may feel they cannot express themselves further or say what they want to say (French et al. 2001), it is vital for a face validity study for the participants to express their true experiences and concerns for the data to be useful. Semi-structured interviews are much more useful when gathering information about unique experiences (French et al. 2001).

The quantitative interview questions used descriptive words and rating scales. A quantitative, dichotomous, closed question relating to the participants experience of being tested was utilised, providing them with negative suggestions to allow the opportunity for them to express a negative answer or experience. Further questions were added to the interview questions due to this being a phenomenological study and the researcher aiming to get more detailed data regarding a person's lived experience. Prompts were added to some of the questions to allow the participant extra support, which the researcher felt due to clinical experience, would be suitable for this particular patient group. Participants were given a selection of words, for this study eight additional

words were added for participants to agree / disagree with. The eight additional words incorporated into this study were: tiring; encouraging; distressing; straightforward; complicated; motivating; confusing; and simple. Tiring was added as it was hypothesised that the addition of the GMP might make the assessment longer to undertake. Words such as encouraging and motivating were added as it was hypothesised that using the GMP might be more supportive than just moving onto the next task after failing a test item, as occurred during the administration of the SOTOF first edition. This was then balanced out with opposite concepts as to not be leading the participant. The first set of words from the 1st edition study were specifically paired as opposites, for example: easy / difficult, boring / interesting. For this study, due to the inclusion of the GMP, words were chosen on assumptions about how this addition might influence patients' experience, however, maintained an even combination of positive / negative words, for example: motivating, confusing, encouraging, distressing (see appendix 3).

In response to feedback from the statistician at the Research Ethics Committee (REC) meeting, who recommended that the researcher might gather more nuanced and interesting data if the descriptive words were rated on a wider scale, and could be asked using a Likert scale. Therefore, rather than replicating Laver's (1994) dichotomous 'yes' or 'No' response items for the descriptive words, a five-point level of agreement Likert scale was used for questions related to the descriptive words (a visual representation of this five point scale, in larger font was printed and laminated and was provided for participants) (see appendix 4). All statements started with 'I found doing the assessment….' each descriptive word was then added to the end of this statement. For example, 'I found the assessment boring?' The five level of agreement options were; strongly disagree; disagree; neutral; agree; and strongly agree. For the full interview schedule, please refer to Appendix 3. This gave participants more scope to express their views rather than using dichotomous questions (French et al. 2001). Using Likert scales can be seen as a limitation as participants' initial responses may be restrained using scaled responses, however, the semi-structured interview approach allowed their responses to be probed and for further discussion to be had if appropriate. With this sample group, some of their deficits post neurological diagnosis included

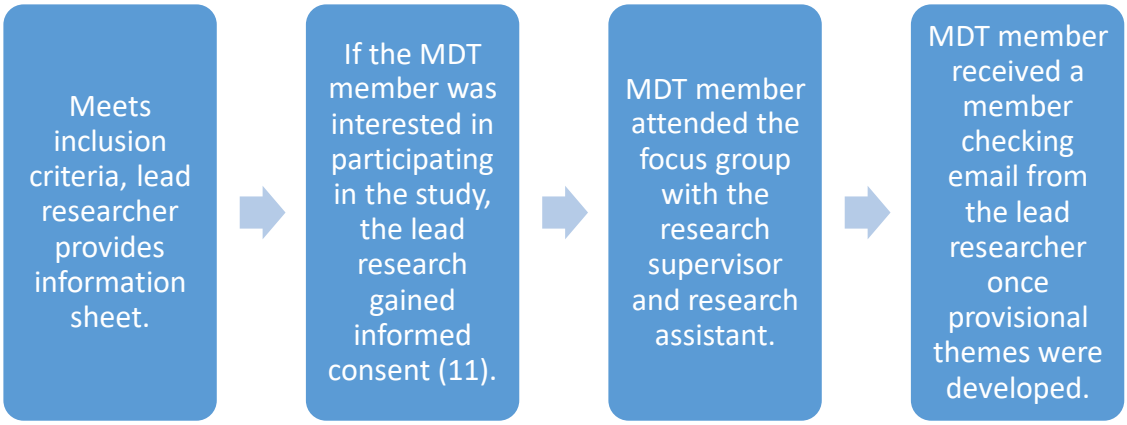
expressive and receptive aphasia, attentional and information processing deficits and therefore, using a scale could support them to express their feelings and opinions. A limitation of the use of scales is that several participants could have the same score but reach those decisions in very different ways (French et al. 2001), highlighting the importance of using the scale as an opportunity for further discussion to gain more detailed data, in combination with the qualitative open questions

Out of the ten interviews, one interview was undertaken by the research supervisor and nine were undertaken by the research assistant. Owing to the fact the lead researcher completed nine out of the ten SOTOF assessments with the patient, it was decided it could potentially increase bias if the researcher also undertook the interviews. It may also impact on the honesty of the patient, if the researcher assessed the patient using SOTOF and then conducted the interview. The research assistant was a 2nd year occupational therapy student who was funded by a grant received from the Council of Allied Health Professions Research (CAPHR). The research assistant had roleplayed the administration of the interview with the supervisor prior to data collection.

2.4.3 Focus group with the Multi-disciplinary team (MDT) participants

The focus group was facilitated by the research supervisor and the research assistant and was held in the ‘day room’ on the stroke rehabilitation ward. It was audio taped on a digital recorder to enhance rigour and trustworthiness, Onwuegbuzie et al. (2009) reiterates recording and transcribing focus group data is the most rigorous mode of analysing. The research assistant took field notes to record which numbered participant was talking throughout to assist later in transcription. Figure two shows the pathway an MDT participant would take during this study.

Figure 2: Pathway for MDT participants



For the MDT participants a mixed methods approach was used comprising a semi-structured focus group (see appendix five) and an online survey comprising both open and closed questions. Kreuger (1994) suggested a focus group should have a facilitator and an assistant, taking on roles to facilitate discussion, encouraging all members to speak and to take notes to inform potential further questions. The focus group gave the opportunity to discuss the impact of the SOTOF results on the practice of the MDT. Focus groups allow a multi-dimensional process of communication (Kellogg et al. 2007). A focus group setting offers participants a chance to explore thoughts, ideas, attitudes, opinions and perceptions and that of their colleagues in an interactive environment, enabling them to listen and reflect on these experiences and opinions (Kreuger and Casey 2000; Kellogg et al. 2005; Kellogg et al. 2007, and Plummer-D'Amato 2008). The facilitator has the opportunity to probe for clarification and elicit more detailed responses (Wong 2008). Although, in individual interviews participants may feel they can be more honest and will less likely be guided to a viewpoint, this would have been more time consuming. During focus groups, participants often feel they need to elaborate or justify an idea when in the company of colleagues, therefore, revealing more about the clinicians' knowledge and reasoning behind their thinking pattern, something less likely to be obtained by a one-to-one interview (Plummer-D'Amato 2008). Kahan (2001) highlighted how focus groups are useful as participants should

share common interests but have enough variation, for this study, owing to the varying professional backgrounds of participants from the MDT, it was anticipated it would enable contrasting opinions to be raised. The participants would also have experience of talking to each other and in front of each other in MDT meetings and in their day to day practice. Kreuger (1994) raised the importance of the size of a focus group, being ideally between eight and fifteen participants, to allow generation of discussion, whilst balancing the risk of loss of valuable comments. Wong (2008) recommended a similar number of six to twelve participants to reduce risk of domination in a smaller group and to ensure there is cohesion. Wong (2008) discussed the use of focus groups specifically in relation to health and medical research, highlighting methods for conducting focus groups, the importance of careful planning, careful facilitation and the risk of bias and opinions being swayed by more dominant participants or the facilitator. For this study, it was decided that the researcher should not conduct the focus group because she worked as a member of the multi-disciplinary team and had led the implementation of the SOTOF assessment onto the ward. Therefore, it might have been more difficult for other members of the MDT to provide constructive feedback. The participants were given participant letters and the research assistant recorded the order in which people spoke to aid transcription. Owing to the fact the lead researcher was working as a full-time clinician during this study, the research assistant was also employed to transcribe the interviews verbatim. A disadvantage of using focus groups is the challenge to manage and control the group to ensure they do not have irrelevant conversation and for those participants who may feel intimidated by more dominant characters to feel confident to express their views and opinions, again highlighting the importance of the facilitators' skill level (Leung and Savithiri 2009). For this study, the focus group was being led by an experienced researcher and, therefore, it was considered that this data collection method was suitable (see appendix 5). The questions asked aimed to provide information regarding the usefulness and usability to the wider MDT and to explore how the MDT shared information regarding assessment results.

2.4.4 Online survey for MDT participants

To get a wider audience and introduce triangulation (Kellogg et al. 2007) an online survey using Survey Monkey was sent via email (see appendix 6) to all professional staff working within the stroke service, this comprised a question regarding consent, demographic questions about their role and then a combination of open ended and closed questions. Open ended questions elicit a whole range of replies of varying length and articulation, this is useful for the type of information (opinions and experiences) this research project sought to find out. Only nine questions were used to keep the survey as short as possible. The questions were taken from the focus group and adapted to ensure suitable for the online survey. This was because those who participated in the focus group were not taking part in the online survey, the aim of the online survey was to reach a larger sample and therefore, more data. It was anticipated to take between 5 – 15 minutes to complete; Revilla and Ochoa (2017) concluded that ideally an online survey should take 10 minutes, with a maximum of 20 minutes as it is known that longer surveys will deter respondents. Some MDT members may have felt they did not have the time to attend the focus group, having an online survey allowed anyone to participate in the study at a time that was more suitable for them. Literature suggests that when online surveys are aimed at specialised populations they have higher response rates and are timely (Fricker and Schonlau 2002). Self-administered paper questionnaires were thought about, however, even though respondents might start to fill in the questionnaire they may give up if they find it hard work to complete (Jones, Baxter and Khanduja 2013). Staff may find the ease of completion and confidentiality of an electronic survey more appealing. An online survey also provided ease for distributing via email rather than having to send them out in the hospitals internal mail system. The questions in the online survey were set up to allow a person to skip a question or submit a partially completed survey.

2.5 Recruitment

Occupational therapists identified potential participants from their caseloads. These potential participants were highlighted to the lead researcher and were screened and given the information sheet (see section 2.9 and appendix 9) if they met the inclusion / exclusion criteria. They were then given 24 hours to

consider participation in the study and discuss with family members or appropriate others. The lead investigator for the study then spoke to potential participants in order to answer any further questions and receive informed written consent (see section 2.10 and appendix 10).

Potential staff participants for the focus group were identified by the lead investigator and given a participant information sheet and the opportunity to discuss and ask any questions about the study. The lead investigator then received informed written consent (see appendix 10).

Potential staff participants for the online survey were identified by the lead investigator from the stroke multi-disciplinary team (MDT) and were approached using email via Outlook. Participants received an email including a participant information sheet. If they were happy to take part in the study, they followed a link to complete the online survey (Survey Monkey) and consent was received as part of the survey (first question, see appendix 6).

2.6 Data analysis

The majority of the demographic data was nominal data and so used descriptive analysis, as the demographic data is simply described and summarised to allow the researcher to identify any patterns and for comparison with previous and future studies (Lane nd). Descriptive analysis was also used for the patient's ratings of the descriptive words in the statements rated using the level of agreement Likert scale.

This research study used a thematic analysis approach for the analysis of qualitative data and descriptive statistics for the analysis of quantitative data. Thematic analysis is useful when trying to gain information about people's experiences and for analysing transcribed focus groups and interviews (Clarke and Braun 2013). Both the interviews and focus group were transcribed verbatim, followed by data immersion, coding and thematic analysis. Interview data, focus group data and the online survey data was analysed by question and thematic analysis was undertaken following the six stages outlined by Braun and Clarke (2006). N-Vivo software was used to support with the thematic analysis process. An inductive approach was used, this is where

coding and theme development are directed by the content of the data. The six stages outlined by Braun and Clarke (2006) are:

1. Familiarisation with the data: This phase involved reading and re-reading the data, to become immersed and intimately familiar with its content.
2. Coding: This phase involved generating succinct labels (codes) that identify important features of the data that might be relevant to answering the research question. It involves coding the entire dataset, and after that, collating all the codes and all relevant data extracts, together for later stages of analysis.
3. Searching for themes: This phase involved examining the codes and collated data to identify significant broader patterns of meaning (potential themes). It then involved collating data relevant to each candidate theme, so that you can work with the data and review the viability of each candidate theme.
4. Reviewing themes: This phase involves checking the candidate themes against the dataset, to determine that they tell a convincing story of the data, and one that answers the research question. In this phase, themes are typically refined, which sometimes involves them being split, combined, or discarded.
5. Defining and naming themes: This phase involves developing a detailed analysis of each theme, working out the scope and focus of each theme, determining the 'story' of each. It also involves deciding on an informative name for each theme.
6. Writing up: This final phase involves weaving together the analytic narrative and data extracts and contextualising the analysis in relation to existing literature.

Thematic analysis is a widely-used qualitative data analysis method. It is one of a cluster of methods that focus on identifying patterned meaning across a dataset. Patterns are identified through a rigorous process of data familiarisation, data coding, and theme development and revision (French et al. 2001 and Braun and Clarke 2006). It suits research questions related to people's experiences and views, it is a flexible approach whilst still providing detailed and rich data (King 2004).

Although, thematic analysis can be used for focus groups, Onwuegbuzie et al. (2009) discusses the use of constant comparison analysis to analyse focus

groups and raises the importance of analysing interactions among participants as well as participants' viewpoints and what they are actually saying (Myers 1998; 2006). Discourse analysis examines words, phrases and the use of language to understand meaning of their experiences (Onwuegbuzie et al. 2009 and Aveyard and Sharp 2013), this is useful when analysing focus groups as the data comes from social interactions. Discourse analysis may have introduced richer data, as analysing a person's use of language may provide more data, however, with only two researchers in the focus group this would not have been practical. Owing to the need for the researcher to be able to concentrate solely on language use and the analysis of body language as it is occurring, this would require one person with the necessary training to observe this (Doody et al. 2013; SAGE datasets 2015). However, for this study, it was felt that following a published method for the analysis of the qualitative method helped to ensure rigour and trustworthiness and makes it easier for the study to be replicated. Thematic analysis was used alone to analyse the interviews, focus group and online survey open questions. Thematic analysis provides a flexible approach, Braun and Clarke (2006) state it offers a more accessible form of analysis, particularly for those early in their research career.

For a novice researcher, it was felt using a step by step guide to conduct thematic analysis would be beneficial. The aim was to develop themes which represented participant's accounts, for which Smith et al. (2011) highlighted thematic analysis suitable. For qualitative research, thematic analysis is the most widely used analytical method (Braun and Clark 2006).

2.7 Rigour and Trustworthiness

The patient interviews were done by a different person to the occupational therapist who administered the SOTOF to increase trustworthiness, reduce potential bias and to allow the participant to feel distanced from the assessor and to hopefully allow them to be honest about their experiences. The research assistant who conducted the majority of interviews had training with the research supervisor which included role play with the supervisor playing the role of a person with stroke.

Member checking regarding provisional themes was undertaken with the MDT participants who contributed to the focus group. Member checking is a

technique used by researchers to help improve the accuracy, credibility, validity, and transferability (Birt et al. 2016). Member checking was not undertaken with patient participants as they had usually been discharged from the unit by the time the data had been transcribed and analysed. Initial themes with their draft definitions were shared in written form with each focus group member individually by email and they were invited to review, comment and provide feedback. This allowed participants to critically analyse the provisional findings and comment on them. The participants either affirmed that the summaries of themes reflected their views, feelings, and experiences, or that they did not reflect these experiences. The member checking email sent out (see appendix 12) stated they were not required to reply if they affirmed that the themes reflected their views. None of the participants replied, indicating all eleven participants agreed that the themes reflected their views, feelings and experiences.

The researcher's co-supervisor checked analysis from the patient interview transcripts to introduce independent verification and increase trustworthiness. The researcher completed a reflective document (see appendix 7) prior to analysing the data to ensure she was more objective for the analysis, this is known as bracketing (Chan et al. 2013). Chan et al. (2013) discussed the importance of bracketing before analysis of data to improve the validity of a study. Bracketing involves putting aside one's own beliefs and / or prior knowledge about the phenomenon, in this case, the SOTOF assessment (Carpenter 2007). To accurately analyse data and not hinder the results, the researcher needs to be aware of how unconscious assumptions of a topic can interfere with the research process (Parahoo 2006), but also that it is not humanly possible for qualitative researchers to be fully objective (Crotty 1996). Reflexivity is a key part of the bracketing process to identify the potential influences and facilitate decision making (Wall et al. 2004 and Chan et al. 2013). It was important to continue the reflective practice throughout the data analysis process as Finlay (2002) highlights, reflexivity can open up unconscious motivations. Although, reflexivity can allow the researcher to examine the impact of their position, perspective and presence and promote insight, a researcher needs to be aware that focusing on their own experiences

and processes may in turn overshadow the voice of the participants and shift the attention away from the phenomena being studied (Finlay 2002).

2.8 Ethics

Ethics approval was obtained via the Health Research Authority (HRA), Research Ethics Committee (REC) and from York St. John University's Cross Schools Ethics Committee (Please see the Ethical approval letter in Appendix 8).

The Mental Capacity Act 2005 (DoH 2005) provided the framework to use for capacity assessment related to the capacity of potential patient participants to provide informed consent for this study. There was constant review of consent, even after participants had signed the consent form. Also, it was made very clear that participants did not have to answer or do anything that they did not want to and could stop the assessment process, interview process or focus group process at any point without any implications for their future care or rehabilitation or work on the stroke unit.

The researcher was aware that some patients with neurological diagnoses may feel anxious or have low mood relating to their diagnosis. For example, some patients following a stroke experience increased emotional lability and become tearful without knowing the reason for this. Experiencing problems undertaking simple activities of daily living may be distressing for some people, particularly if it is the first time they have attempted to do these tasks independently since diagnosis or admission to hospital. Two main areas were identified as potential risks; distress and fatigue.

Distress

The College of Occupational Therapists (COT 2015) stated that every effort should be made to judge and assess a person's level of distress and to take appropriate action. COT (2015) stated that anything that may cause distress should first be explained to the individual.

If the researcher felt the SOTOF test administration or the interview questions were having a detrimental effect on the participant's mental health or causing any form of distress the person administering the SOTOF or undertaking the interview would have:

- Paused the test administration and given the person time to compose him/herself.

- When he / she had composed him/herself, the researcher would have reminded him / her that he / she can stop the test or interview and reassure him / her that this has no bearing on his / her future care or rehabilitation. The person would have been given the choice to: continue the test/interview; rebook the test/interview; or withdraw from the study.

- If the person appeared unable to compose him/herself the researcher would have ended the test/interview and would have offered reassurance. The team member in charge on the ward would have been informed. If a participant became distressed during the test, it would be an occupational therapist who has the sufficient training to manage the situation. If a participant became distressed during the interview, the research assistant would seek assistance from a clinical member of the team on the ward.

Fatigue

Some people with neurological deficit have increased levels of fatigue (Cumming et al. 2016) and it may have been necessary to break up the SOTOF administration offering breaks between the four tasks of eating, washing, drinking and dressing. Some people may have difficulty maintaining concentration and attention leading to tiredness and the need for regular breaks during the interview.

If the researcher felt the SOTOF and / or related interview questioning was leading to tiredness or fatigue, then:

- Researchers would have offered a break between the SOTOF 4 tasks (eating, washing, drinking, dressing) or between interview questions if the person appeared fatigued.

- The researcher would have judged the situation and stopped the test/interview session if necessary.

- The participants would be assured that they could have a rest or break at any time.

2.9 Information sheets

Participants were given a written information sheet by their lead OT or by the lead researcher (see appendix 9) outlining the purpose of the study, procedures, confidentiality, right to withdraw, planned data storage, use of data and dissemination of results. If the patient was unable to read, the staff member, either their lead OT or the lead researcher, could read through the information sheet to the patient. Participants were then given the opportunity to discuss the information provided and ask any questions. The following day (approx. 24 hours later) the participant was given the consent form (see appendix 10) and given further opportunity for discussion. The General Medical Council (2013) stated that researchers should ensure all information is provided and potential participants are given the opportunity to ask any further questions prior to gaining consent. This allowed participants time to decide whether they would like to participate and also to discuss with family / friends if they feel the need. From a research perspective, it would have been useful to have more time for participants to discuss the research project with family prior to giving consent and undertaking the assessment (a cooling off period) (Dowrick and Frith 2012). However, in this project, the assessment will be undertaken to plan their future treatment / therapy / goal setting alongside collecting data for the project. If the cooling off period was longer than 24 hours it may delay the assessment and, therefore, the ongoing treatment planning and goal setting. A longer cooling off period was granted where possible. It was felt the MDT participants may not require the full 24 hour period to decide on participation, therefore, they were approached by the lead researcher with the written information sheet and given the opportunity to ask any questions, if they felt they did not require further time to make a decision they were recruited at that time. However, they were given the option to take time to think about the decision. For the MDT participant's online survey, participants were emailed an invitation to take part in the study. The email (see appendix 6) outlined the purpose of the study, procedures, confidentiality, right to withdraw, planned storage, use of data and dissemination of results.

If patient participants wished to withdraw from the study during the cooling off period stated on the participant information sheet, then any data collected would be destroyed and not included in the analysis. If staff participants withdrew from

the study during the cooling off period stated on the participant information sheet, then their contributions to the focus group discussion would be removed at the point of transcription and not included in the analysis.

2.10 Informed consent

After the 24 hour period, the lead researcher approached the potential patient participant to answer any further questions and for the completion of the consent form (see appendix 10) unless the person declined to participate. The person interviewing (researcher, lead supervisor or research assistant) sought verbal consent again before the face validity interview was undertaken and the participants had the right to change their mind and not participate in the interview. Participants were given a copy of the consent form and information sheet to retain. If participants were experiencing a reduction of functional use in their dominant hand due to the diagnosis and were unable to sign their name, then audio taped verbal consent was obtained and witnessed by a second member of staff on the ward. This was an important option to have as the Royal College of Physicians (2016) highlight that approximately 70% of stroke survivors experience altered arm function.

After MDT participants had had sufficient time to ask questions and read the information sheet, written consent was received by the lead researcher, they were informed of their ability to withdraw their consent at any point before, during or within one week after the focus group. With regards to the online survey, the first survey question asked if the participant consented to take part in the research study.

2.11 Anonymity and confidentiality

As potential participants were identified from hospital caseloads and medical records, study procedures are covered by the Hospital Trust's confidentiality policy, Healthcare Professions Council (HCPC) (2016) and the Royal College of Occupational Therapists Code of Conduct and Ethics (2015).

Patient identifiable information was only accessed by those healthcare professionals who already had access to this information to provide the

standard care for the patient. The research team followed the NHS Code of Confidentiality (2003), Data Protection Act (2018) and local confidentiality procedures to ensure the confidentiality of personal data. All participants' data was anonymised. The only documents with personal data on was the consent forms and a list or participant names and number codes, all of which were kept in a locked cabinet at the Hospital. All manual files related to the study were kept in a locked cabinet in a locked room at the Hospital, all electronic documents (including audio files) were kept in password protected files with only the lead investigator and research assistant having access on NHS computers, which were also password protected. It was Trust policy to archive the documents for a minimum of five years after completion of the study. Participants were informed that the publication of direct quotations from respondents may be used in articles or presentations, however, these would be anonymised. The anonymous data was analysed by the lead investigator and the thematic analysis was reviewed by the co-supervisor. This took place at the Hospital and at the University.

2.12 Chapter summary

This chapter has described the methodology for this study. To meet the research aims of the study, it was felt a mixed method, cross-sectional design with semi-structured interviews, a focus group and an online survey was thought to be the most appropriate. The two sample groups have been described along with the data collection and analysis plans. The next chapter will describe the findings from the study.

Chapter 3 Findings

3.1 Introduction

The previous chapter outlined the design and procedures of this study. This chapter presents and describes the results identified from the data analysis. This chapter will firstly describe the patient participants who were recruited, their quantitative ratings for their level of agreement with the positive and negative words to describe their experience of undertaking SOTOF and the themes that were identified from the qualitative data collected from the open interview questions. This chapter will then describe the focus group and online survey participants and the themes that were identified from the MDT focus group and the MDT online survey. Direct quotes are provided throughout to illustrate the descriptions of the themes derived from the interview data and focus group data.

3.2 Patient participants

The patient participants' findings relate to objectives one and two of the study and aims to explore the face validity of SOTOF (2nd edition).

Objective 1: To explore the experiences of people with neurological diagnoses (e.g. stroke, head injury, Parkinson's Disease, multiple sclerosis) undertaking the SOTOF 2nd edition.

Objective 2: To explore the perceptions of people with neurological diagnoses (e.g. stroke, head injury, Parkinson's Disease, multiple sclerosis) on the purpose of SOTOF 2nd edition

3.2.1 Demographics

Ten patient participants were recruited into the study from a stroke / neurology rehabilitation unit. Although, the study was able to recruit patients with any neurological diagnosis, all participants recruited had a diagnosis of stroke. These participants were recruited over a seven-month period.

Table one provides information regarding the participants' age, gender, highest level of education and neurological diagnosis. There was an even number of five male and five female participants and their ages ranged between 67 to 92 years (mean=78.4, s.d. = 8.21). Participants' level of education was sought to

explore if there were any potential links between their experience of the assessment and their level of education, and to also be able to compare with samples for studies completed on the first edition of the SOTOF (Laver 1994). Based on visual inspection there did not appear to be any obvious links between the educational level and what their score on the SOTOF was or the feedback they gave on their experience of undertaking the SOTOF. For instance, those with a higher educational level didn't necessarily score higher on the SOTOF or give negative feedback, for instance; too easy, boring, or irrelevant.

Table 1: patient participant demographics

Participant code	**Age**	**Gender**	**Highest level of education (as described by participant)**	**Primary Diagnosis**
S01	71	Female	Secondary school… straight into work	Stroke
S02	79	Male	Certificate in education (age 21)	Stroke
S03	74	Male	Apprenticeship	Stroke
S04	88	Female	Secondary school	Stroke
S05	92	Male	Master's degree in comparative physiology	Stroke
S06	67	Male	GCSEs	Stroke
S07	81	Female	Degree in Art and History	Stroke
S08	86	Female	Secondary school	Stroke
S09	72	Female	O levels and HNC	Stroke
S010	74	Male	Secondary school, in army and police force	Stroke

3.3 Level of agreement ratings for positive and negative descriptors

As part of the semi-structured interview, participants were given eighteen words, which they were asked to rate on a 5-point scale, from strongly agree to

strongly disagree, to indicate how much each word might represent their experience of undertaking SOTOF (see Appendix 3 and 4).

Figure three (see below) demonstrates the ratings for the positive experiences descriptors: useful; relaxing; motivating; interesting; enjoyable; and encouraging. None of the participants strongly disagreed with any of the positive descriptors. The majority of participants agreed or strongly agreed to all the positive descriptors. Nine out of the ten participants reported finding the SOTOF encouraging and eight out of the ten participants reported it was useful. Seven participants reported finding the test motivating and interesting. Only one participant disagreed that the test was useful, motivating, enjoyable or encouraging and only two participants disagreed that the test was relaxing or interesting.

Figure four (see below) demonstrates the responses to the negative descriptors: upsetting; tiring; stressful; difficult; confusing; complicated; and boring. Most participants disagreed or strongly disagreed to all the negative descriptors. Five out of the ten participants found doing the test tiring. All ten participants reported not finding the test stressful. Nine out of the ten participants did not find the test upsetting. Eight participants reported not finding the test complicated or confusing and seven participants reported not finding the test difficult.

Figure 3: Responses to positive descriptors

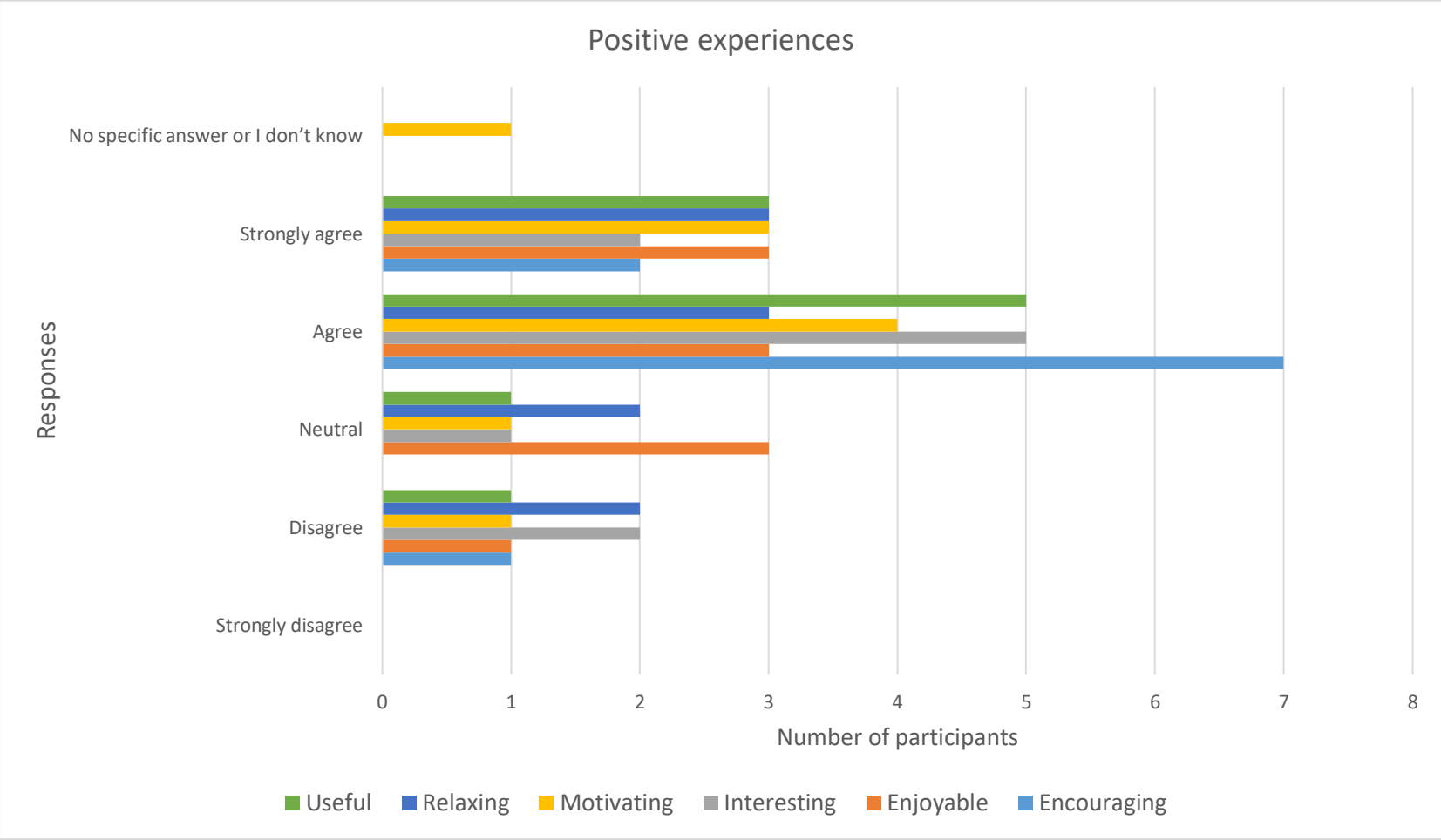
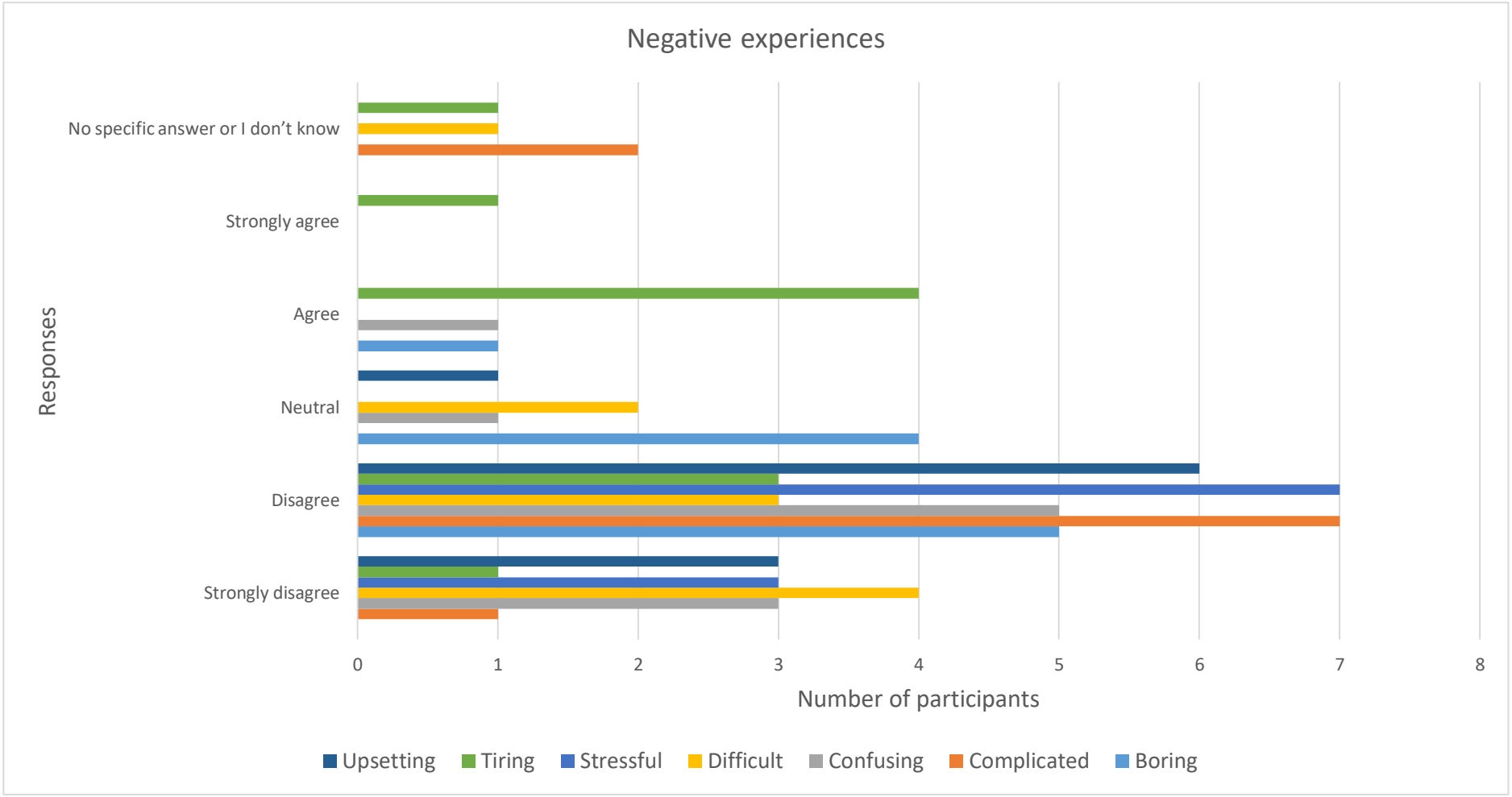


Figure 4: Responses to negative descriptors



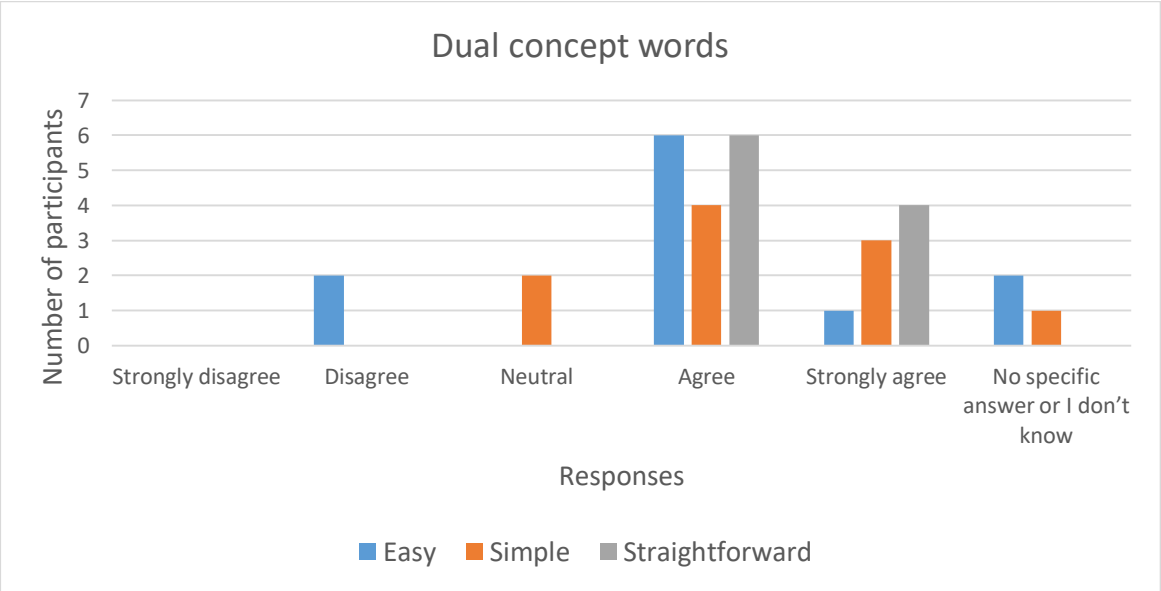
Some of the descriptors, for example easy, straightforward and simple, could have a duality of concepts, these words could be interpreted as both negative and positive. For instance, the test being 'easy' could, for some patients mean a positive experience but for others could mean a negative experience. They may find a task easy so they experience functional ability and recognise they are still able to do things but too easy might feel demeaning, even childish, as these are simple tasks we learn to do as a child. This was demonstrated by comments such as:

> *S05: 'I thought it was easy…I would have thought it might have been more searching'*

> *SO2: 'In some respects a little bit too easy'*

Figure five shows the responses to these descriptors, two participants disagreed the SOTOF was easy, however, six participants agreed, and one strongly agreed it was easy. Four participants agreed, and three participants strongly agreed the test was simple. Six participants agreed, and four participants strongly agreed the test was straight forward.

Figure 5: responses to dual concept descriptors



In summary, most participants agreed with the positive descriptors and disagreed with the negative descriptors, suggesting overall a more positive rather than negative experience of undertaking the SOTOF.

3.4 Themes

Table 2 (please see below) describes the three themes that were derived from the analysis of qualitative data obtained from the patient participant interviews and the definitions of those themes.

Table 2: Interview theme definitions

Theme or subtheme label	Definition
1. Understanding of the purpose of the SOTOF.	Patients' understanding about the purpose of the test and why the therapist was assessing them.
2. Positive experience related to completing the SOTOF.	Positive descriptions about undertaking the SOTOF, including comments about the length of the test, and the instructions to complete the test.
Subtheme: 2.1 Assessor's impact on experience	Indications that the assessor had a significant impact on the experience for the patient.
Subtheme: 2.2 Learning from doing the test	Descriptions that patients felt they learnt about themselves from doing the test.
3. Negative experience related to completing the SOTOF	Negative descriptions about undertaking the SOTOF, including comments about the length of the test, the level of difficulty and repetitiveness.
Subtheme: 3.1 Too easy	Descriptions that some patients found the test too easy, causing negative feelings

Table 3 identifies the participants' comments that contributed to each theme or sub-theme, demonstrating that the analysis is grounded in data. The numbers in the table represent how many direct quotes (each direct quote is a separate sentence) from individual participants were linked to the themes. This demonstrates that each theme was derived from at the least five different participants' responses. Appendix 11 shows all the direct quotes from the interviews that are represented within the themes.

Table 3: Content analysis

Participants' codes → **Themes ↓**	**SO1**	**SO2**	**SO3**	**SO4**	**SO5**	**SO6**	**SO7**	**SO8**	**SO9**	**SO10**
1. Understanding of the purpose of the SOTOF.	1	1	1	1	1	2	2	2	1	1
2. Positive experience related to completing the SOTOF.	2	5	4	2	4	3	2	2	4	4
2.1 Subtheme: assessor's impact on experience		2	3			3		1		1
2.2 Subtheme: learnt from the test			1		1	3		4	1	1
3. Negative experience related to completing the SOTOF	2	1			2	2	4		1	1
3.1 Subtheme: too easy		1	1		2		2			1

3.4.1 Theme 1: Understanding of the purpose of the SOTOF.

Participants were asked what they understood the purpose of the assessment to be. Of the ten participants, six referred to the purpose being to understand how capable they were to complete everyday tasks, for example;

S06: 'I think my abilities to do everyday tasks, getting dressed, feeding myself and thinking for myself as well'.

S01: '…what I was capable of doing'.

SO2: 'The purpose of the assessment, I think, was to see how I could cope with various aspects of hospital life. Probably in an intellectual way. How I could be dealt with, what level I could be dealt with…....But I think that people who are dealing with erm, patients, perhaps need to know at what level to erm aim their instructions at'.

S02 was able to identify that the assessment was not only to assess how he could manage with everyday tasks but also what level of support he required to enable him to complete task. None of the other participants mentioned that, during the assessment, the assessor was providing different levels of mediation to support the participant to complete the task. Only one participant specifically mentioned the purpose of the test was to assess progression:

S06: '…trying to find out where we're going, making progress I think…'

One participant referred to specifically his physical deficits:

SO3: 'Well, to see how much use I've got, obviously, with me own limbs'.

Two people referred specifically to their mental capacity or cognitive abilities:

S04: 'To find out if I understood'.

SO5: 'My, uhm, mental capacity to do things.'

One participant said they had no idea and later in the interview when asked by the interviewer if she thought it could have been explained to her she said, '*well it probably was but I wasn't taking it in'*. This theme demonstrates that even with a verbal explanation of the reasoning for completing assessments, patients may not

always absorb that information and be able to link that to their therapy interventions and goals.

3.4.2 Theme 2: Positive experience related to completing the SOTOF

This theme represents all the positive responses from the participants with regards to undertaking the SOTOF, including their thoughts about the length of the test and how they felt about the instructions provided to complete the test.

Eight participants made a positive comment about the length of time the SOTOF took to complete, for example:

> *S010: '…just about right'.*
>
> *S03: 'I thought it was sufficient'.*
>
> *SO5: 'I thought it was what one would expect really'.*
>
> *S06: 'Okay within what I'd call a normal space of time. Not taking too long or it wasn't rushed'.*

One participant recognised that for him the SOTOF's length was acceptable, but for others it might feel too long. This participant had fewer deficits from the stroke and was one of the participants who reported finding the test 'too easy':

> *SO2: 'I didn't think the, for me, it didn't seem too long. Perhaps for other people they may'.*

One interview question asked how participants had found the instructions they were given throughout the SOTOF. Nine out of the ten participants commented on the instructions being clear and easy to follow, for example:

> *S02: 'I think it's a very clear test…The instructions that were given to me were very clear and quite easy to follow….and I was quite happy listening to the instructions. Which were quite clear and concise'.*
>
> *S03: '…they was easy enough….They were clear enough',*
>
> *SO6: 'Erm, comfortable, quite easy yeah. They're quite clear in what they want you to do and I'm doing them to the best of my ability'.*

Participants were asked if they felt they required a break whilst completing the assessment, none of the participants reported that they felt they needed a break. Two participants reported they felt they could ask for a break if they had required one:

S010: 'I was told just take your time and if you want to rest, rest'.

SO3: 'No, if I had of done, I would of said I'm feeling too tired, I don't want to go no further. Which were explained to me that I could do that'.

Two participants made specific comments about enjoying doing the test:

S01: 'I enjoyed it'

S03: 'No I think I enjoyed it all'

Three participants made comments about finding engaging in the SOTOF interesting, for example:

S05: 'Well I was interested'.

SO6: 'Very good, it's interesting yeah. It's er, I found everything as I've come through the whole process has been interesting'.

One participant, commented that undertaking the test had been a positive experience as it had given her an opportunity to show what she was capable of doing:

S09: 'This one today was better. Because it gave me chance to shine'.

3.4.2.1 Subtheme 2.1: assessors' impact on experience

Although, during the interview there were no questions regarding how the assessor made the patient participants feel or how the assessor impacted on their experience, there was a clear theme when asked more generally about their experience of completing the SOTOF, participants openly discussed how the assessor made them feel. In particular, six participants commented on how they were made to feel comfortable and at ease, for example:

SO2: 'I felt quite comfortable…I did not feel embarrassed at doing it'.

S06: '…comfortable. I've got confidence in the girls y'know, very confident with them which makes me feel at ease'.

S03: 'Okay. There were no pressure…I didn't feel there were any stress on me what so ever….That like I said they put you at ease actually, right from the start'.

S010: 'I thought they were quite good really'.

S08: 'She was a very nice young lady and very patient with my hearing'.

One participant explained this further and highlighted the importance of making patients comfortable before completing an assessment to get a true picture of their capabilities.

S06: 'They make you so relaxed and that's a great thing to me. So I'm quite nervous about it all, I'm nervous about like this arm doing something silly, like it wanders off and does things on its own…. But they make you comfortable. Very capable'.

This subtheme highlights the importance of the role of the assessor and the therapeutic relationship with the patient.

3.4.2.2 Subtheme 2.2: learnt about themselves from doing the test

During the data analysis stage, a theme became evident regarding participants gaining insight into their own abilities and deficits whilst undertaking the SOTOF. Six out of the ten participants made specific comments about how they had gained something from completing the assessment. Two participants commented on simply finding the assessment useful:

S010: 'Quite useful'

S05: 'Well I was interested'

However, four participants were slightly more descriptive about how engaging in the test had increased their awareness about their deficits, both physical and cognitive, and the impact these deficits were having on activities of daily living, for example:

S03: '…I think I learnt a little bit from it'.

S08: 'Well alright but I find there's a lot I can't do…I was shocked actually…I thought I could do a lot more than that…I didn't follow them [instruction] *as straight as I thought I would'.*

For some, this may suggest a negative experience, however, two participants were able to recognise that some aspects of tasks may have become easier and they had made improvements.

S06: '…bit of a shock to say…Simple everyday tasks become a problem...And pouring the drink. [Inaudible] *felt as though they were coming back'.*

S09: '…because it gave me chance to shine'.

3.4.3 Theme 3: Negative experiences related to completing the SOTOF

This third theme highlights the patient participants' negative experiences of undertaking the SOTOF, including their feelings about the length of the test, the level of difficulty and repetitiveness. This theme has one subtheme related to those patients who found the test too easy, related negative feelings about their experience.

Two participants commented on the length of the test being quite long, and one participant suggested taking breaks in between each task:

S07: 'It took quite a long time'.

S02: '…is a little bit long. It's divided into three sections, perhaps it could be just done in three sections.'

S02 had said he felt the test length was suitable for him but for those who had more difficulty with the test may find it too long. The interviewer explained the test did not have to be completed all in one sitting and could be broken down into four separate sessions if required. One participant commented on the test feeling repetitive:

S05: '…it was slightly repetitive…And there was some unnecessary repetition in it. Like where to place a fork or a cup and things'.

Five participants described more specific negative feelings about their experience of undertaking the SOTOF; these comments included feelings that the test was limited and, therefore, they were unable to show what they were actually capable of doing and feelings of frustration if elements were difficult. For example:

S01: 'Oh you feel a bit silly… a bit frustrating sometimes'.

S07: 'Um, not particularly comfortable…Well I didn't understand what it was about...There's too many different things going on'.

S09: 'Well it didn't give people a chance to express themselves, to do more than what they were asked to do'.

The following two quotes are specifically important as they highlight the impact of completing a test with someone at the wrong level of difficulty and the importance of the 'just-right' challenge.

S010: 'Well in my case I think it's a bit demeaning [sic] to say 'what is that?' when you know, well it's a bowl, what's that? It's a jug. But that's for me'.

S07: 'I felt like a child'.

The second quote suggests potentially an impact on their self-esteem. When the interviewer asked the participant to elaborate on this, she stated '*just the questions I think'*.

S06 describes how feeling like he is being watched impacted on him, indicating how standardised testing can impact on patients' performance during assessments:

S06: 'You know, and you feel like everything you're doing is being watched…I find it a little bit nervous but'.

3.4.3.1 Subtheme 3.1: too easy

One of the study's inclusion criteria was that participants must have mental capacity to provide informed consent. This criteria excluded many patients who would potentially benefit from undertaking the SOTOF. Four of the patients who participated in the study particularly commented on how they found the test too easy, for example:

SO2: 'In some respects a little bit too easy'.

S05: 'I thought it was easy…I would have thought it might have been more searching'.

SO7: 'Well it was quite easy…A whole, a whole lot of it was easy'.

S03: 'No, I think it was simple enough'.

3.5 Additional findings

During data analysis it was noted that two questions from the semi-structured interview fed very little into the overall themes. Firstly, question five; (have you recently been involved in any other assessments whilst you have been staying on the ward? If, yes, how did this assessment compare to the other one(s)?) Six out of the ten participants stated they had not been involved in any other assessments. Three participants reported different activities when asked about other assessment they have been involved in such as; upper limb exercises, visual re-training exercises and having a volunteer and junior doctor visit him. It is interesting that what they described were interventions rather than assessments. One participant was unable to specify what involvement he had had but stated:

S01: 'I been doing all sorts of, they've been fantastic...'

None of those activities mentioned above were assessments. Only one participant described an assessment but the conversation did not go further to describe whether this was a home visit assessment, a functional assessment or a pen and paper type assessment:

S09: '…the assessment for when I can go home.'

Secondly, question six (were the four tasks familiar activities to you? Prompt: the assessment had an eating task, pouring a drink, washing your hands and putting on an item of clothing. What other everyday tasks would be important to you whilst in hospital?) Six out of the ten participants stated 'yes' they were familiar activities, two participants stated 'no' they were not familiar activities. Two participants did not answer the question. The other ADLs the participants highlighted as important to them were: a full wash / shower (3 participants); shaving (1 participant); brushing teeth (2 participants); going to the toilet (1 participant); washing your face (1 participant); ironing (1 participant); and cooking (1 participant). One participant stated that he would want activities which involve the use of hands bilaterally.

3.6 Summary of patient participants findings

In summary, the three themes derived from the analysis of patient interviews were: their understanding of the purpose of the SOTOF; positive experiences related to completing the SOTOF; and negative experiences related to completing the SOTOF. Some significant and key findings were the impact the assessor has on the experience, the importance of getting the level of difficulty of an assessment correct and suitable for the particular patient, the value and / or shock for patients learning about their abilities / disabilities from engaging in an assessment and the realisation for professionals that at this stage in a patients recovery they may not absorb as much information as one thought. Overall, participants agreed to more of the positive words and disagreed to more of the negative words when discussing their experience of undertaking the SOTOF. The first theme indicated that the patient participants understood the purpose of the SOTOF. These findings contributed to the study's aims to explore what patients perceive the purpose of the SOTOF to be and to explore the patients' experiences of undertaking the SOTOF.

3.7 MDT participants

The MDT findings relate to study objectives three, four and five and the aim to explore the content validity and the clinical utility of the SOTOF (2nd edition).

Objective 3: To explore the perceptions of the staff working in a stroke rehabilitation multi-disciplinary team on the content of SOTOF.

Objective 4: To explore if staff working in the stroke MDT consider the SOTOF scoring form and summary of results useful for their practice.

Objective 5: To explore if the staff of the stroke MDT consider the SOTOF useful for informing goal setting in rehabilitation and treatment plans.

3.7.1 Online survey

The online survey was sent out to all staff members within the stroke service at the same trust, except those who had participated in the focus group as the questions were very similar, the aim was to open opportunity to contribute to a wider sample. There were nine responses in total, however, one participant skipped the first question regarding consent, thus, their responses were deleted before analysis. The respondents were made up of: three speech and language therapists; one nurse; one physiotherapist; two occupational therapists; and one occupational therapy assistant. Table four below shows their responses to the survey questions. In the online survey, the fifth question asked participants if they had seen the SOTOF report form in patients' notes, if they answered no to this question they were to proceed to the final question asking about recommendations. Six out of the eight participants replied no to this question, therefore, only two participants proceeded to complete questions six to nine.

Responses to questions two to six are presented below in table four. Question seven stated 'are the results useful to inform your practice within your particular profession?' Out of the two responses, P13 reported *'somewhat useful'* and P17 *reported 'not very useful… the results of the assessment have not been directly useful to OT assistants, however they may inform the therapy treatment plans used by assistants'.* Question eight stated 'have the results supported your approach to interventions? P13 reported '*no...while I have seen the results of colleges who have*

used the SOTOF and found these to be useful and informative, I have not had the opportunity to use the assessment with anyone on my current caseload.' P17 reported *'no'.* Question nine stated 'Do you have any recommendations for any improvements to the SOTOF or what information would you like in the summary of the record form or in the patients' continuation notes?' P13 reported 'no'. P17 *reported 'a clear summary of the deficits highlighted by the assessment is helpful to have in the patient's notes as well as the summary record form'.*

Table 4: Online survey responses

Participant codes → **Questions** ↓	**P12** Physio-Therapist	**P13** Occupational Therapist	**P14** Speech and language therapist	**P15** Nurse	**P16** Occupational Therapist	**P17** Occupa-tional therapy assistant	**P18** Speech and language therapist	**P19** Speech and language therapist
How many years have you been qualified?	5-10 years	5-10 years	Over 10 years	Over 10 years	5-10 years	1-4 years	Less than 1 year	5-10 years
Were you aware of the SOTOF prior to this study?	Yes	No	No	No	No	Yes	No	No
Have you seen the SOTOF assessment report / summary of results form in any patients' notes?	No	Yes	No	No	No	Yes	No	No
How easy was it to access the SOTOF record / scoring form?	Skipped	Very easy	Skipped	Skipped	Skipped	Easy	Skipped	Skipped
How easy was it to understand the findings of the assessment?	Skipped	Easy	Skipped	Skipped	Skipped	Easy	Skipped	Skipped

3.8 MDT focus group

3.8.1 Demographics

Eleven staff members from the stroke multi-disciplinary team were recruited to participate in the focus group. This included: an occupational therapist; two physiotherapists; a speech and language therapist; a nurse; a consultant; and five therapy assistants. Table five provides the participant code with the person's role. All staff members were from the same stroke service within an NHS teaching hospital trust. A list of questions were developed (please see Appendix 5) for the focus group to aid discussion, however, not all questions were used owing to some participants not having seen the SOTOF record form. The focus group, therefore, led into discussions more about assessment tools from a general perspective and what participants felt would improve the accessibility and usability of the SOTOF. Once provisional themes were derived from the focus group, a member checking email was sent out to all participants (see Appendix 12), they were given three weeks and two days to provide any feedback, responses or thoughts. It was stated in the emailed message that if they did not respond the researcher would assume they agreed the themes were a credible representation of the focus group, the researcher received no responses.

Table 5: MDT focus group participants' roles

Participant code	**Profession**
PO1	Stroke Rehabilitation Assistant
PO2	Stroke Rehabilitation Assistant
PO3	Stroke Rehabilitation Assistant
PO4	Occupational Therapy Assistant
PO5	Occupational Therapist
PO6	Speech and Language Therapist
PO7	Physiotherapist
PO8	Physiotherapy Assistant
PO9	Physiotherapist
P10	Nurse
P11	Stroke consultant

3.9 Themes

The focus group and online survey were analysed separately and then findings were analysed together, and compared and contrasted and resulted in the emergence of four themes. Table six below describes the four themes.

Table 6: MDT theme definitions

Theme or sub-theme label	Definition
1. Reliance on and importance of verbal handover	Verbal handovers were primarily used between MDT members to share information, both within formal meetings (e.g. MDT meeting) and informally during every day practice.
2. Importance of having a score attached to a test	The need for a score when using assessment tools, particularly to benefit other professions to understand the results of a tool.
3. Lack of awareness of SOTOF	The lack of awareness of SOTOF by MDT members either before the study on the ward and / or during the study.
4. Usefulness to inform practice	The use of the verbal handover of a patient's SOTOF results so other MDT members could benefit from the results of the tool with their patients. Use of SOTOF to support their intervention planning.
4.1 Subtheme: documentation	Documentation appeared to be a key reason why participants may not be benefiting from OTs using the SOTOF. Suggestions for how the SOTOF documentation could be changed to enhance usability.
4.2 Subtheme: a particular client group	This particular assessment was thought to be best used with a specific client group, the patients with more significant cognitive and / or perceptual deficits.

Table seven below, provides the number of direct quotes (each quote is from a separate sentence) from each participant in the focus group that contributed to each theme.

Table 7: Number of direct quotes feeding into the themes from MDT focus group

Participant **Theme**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P10**	**P11**
Reliance on and importance of verbal handover			1		1		2		1	1	7
Importance of having a score attached to a test					2						4
Lack of awareness of SOTOF	1	1	1		1	1	2		1	1	2
Usefulness to inform practice			3		2	1	1		3		
Subtheme: documentation			2		7	1	2				1
Subtheme: a particular client group			3		2						

3.9.1 Theme 1: Reliance on and importance of a verbal handover

The staff members clearly valued the informal and formal verbal handovers they received from each other to enable them to adapt and improve their practice for patients. Clinicians may give advice, feedback or recommendations to other professionals but not necessarily say what assessment they used to obtain these findings and provide the related advice. Verbal information is shared at multi-disciplinary team (MDT) meetings, however, not all staff attend these meetings and, therefore, rely more on the informal feedback, given by occupational therapists, to support their interventions with service users, for example:

> *P11: 'I mean I think for me if this comes through at the MDT it's sort of not presented in a way of 'these are the results of this assessment'…So I'm not aware necessarily of the scoring systems of this, but it tends to come out as, I guess a…like a dialogue'.*

> *PO3: 'As an SRA, she,* [*occupational therapist*] *would just give us feedback'.*

It seemed, informal verbal handovers are relied upon by all professions, not just those who do not attend MDT meetings:

> *PO5: '…but normally an assessment we'd just verbalise it anyway to the physio or whoever we're working with, if there's any bits that I think would benefit.*

> *PO7: 'I agree we generally seek out each other's opinions anyway and as a team I think we all work quite closely and discuss what we're finding with our patients or ask opinions of other people on our patients. I think generally anyway but this would possibly help give a bit more of an in-depth opinion of specific tasks possibly'.*

> *PO9: 'We often see patients together so following those sessions or even during those sessions we sometimes share advice between each other so'.*

> *P10: 'I don't know anything about it at all so it we just rely on feedback from the therapists'.*

This also demonstrated the importance of effective multi-disciplinary working, to share knowledge between professionals to enhance a service users' experience. It was clear from responses that the other professionals valued the specific knowledge an occupational therapist can provide with regards to cognition and perception to support their practice, for example:

> *PO7: '…probably look at what the score was but then still speak to somebody to know what that means and how to interpret it. I could see their MoCA* [Montreal Cognitive Assessment] *score was low but then I would speak to whoever had done the MoCA to find out and get that verbal handover of actually what that means'.*

> *P11: '…so you know I think the narrative is…ends up being the most important thing…But then I think the narrative is the most important thing in all areas of medicine anyway…the narrative is the most important thing for the individual patient'.*

During the focus group, it was evident that verbal handovers to share advice and recommendations were the most relied upon and important form of communication, rather than written documentation. It was anticipated that during MDT meetings this would be the primary place for these sort of conversations, however, it seems during day to day practice, these informal discussions are significantly important and valued. One of the questions in the online survey asked participants if they had seen the SOTOF report form in any patients' medical notes, six out of the eight respondents (75%), reported they had not seen the documentation. However, some of these participants did know about the SOTOF, suggesting they were reliant on the verbal handover or discussion.

3.9.2 Theme 2: Importance of having a score attached to a test

Throughout the focus group there were several points made regarding the benefit of having a score attached to an assessment tool, not just for the professionals who conduct the assessment, but for other professions to understand its results. The SOTOF (2nd edition) has a scoring system that provides item scores and an overall

score for each of the four tasks which indicate how independent a patient is with each task.

> *PO5: 'I did like the score bit as well because it's…a lot of the time you do the functional assessment you're just describing what you're seeing…the score really highlighted when someone's need quite a lot of assistance or not so much assistance and then it gives you the option to do it as an outcome measure as well'.*

> *P11: 'Yeah I mean the thing with scoring and y'know medicine is quite a reductionist sort of thing and often it's when you're trying to communicate across groups to people who aren't experts in your area y'know in medicine it will come down to diagnosis or something'.*

> *P11: 'You don't need to show your working and how you got there... goes across y'know specialist groups and are understood by everybody like Barthel scores. MoCAs, balance tests, those sorts of things. If you had something like that within an MDT it's quite useful…as well, is there a change in this function over time?'*

One participant also suggested that scores are not necessarily always a great addition to an assessment tool as it is not always clear what the score actually means. However, the overall benefit of using a score to share information, particularly across various professions with different expertise, is valued:

> *PO11: 'Mhm, yeah. So having some…we know that as soon as you attach a number to it, it automatically becomes quite crude. You know like MoCA's and so on we know that and we understand that, but it does just give you something to hang your hat on and it can be quite useful in that respect'.*

3.9.3 Theme 3: Lack of awareness of SOTOF

In the online survey, participants were asked if they were aware of the SOTOF prior to this study, 75% (n=6) replied no, 25% (n=2) replied yes, whilst 75% (n=6) also replied they had not seen the SOTOF record form in the notes. In the focus group, all

participants reported they had no awareness of the SOTOF prior to this study and during the study participants might have heard about the tool or about the study but very few had actually seen or used the assessment tool:

> *PO2: 'Only since* [*the researcher*] *started it. Didn't know anything about it before.'*

> *PO7: 'Possibly because it's not as widely used or widely known so it's something that's not been triggered initially to me.'*

> *P10: 'I don't know anything about it at all so it we just rely on feedback from the therapists.'*

Three participants had some basic knowledge about the assessment tool due to either training or seeing the tool:

> *PO6: 'I've seen the test booklets in patient's notes'*

> *PO5: 'I went to the training session she did on what it was and how to use it, how to test people using it'*

> *PO9:* ['*Researcher*] *or it might even have been PO5 showed me the paper work once they'd used it with the patient. So I learnt a bit from that.'*

It was also clear throughout, that participants felt they potentially could find it useful if they knew more about it or if it had been used more, highlighting the importance of embedding a tool into practice and the challenges that come alongside that:

> *PO7: 'I think if it was something that was more frequently utilised and was more embedded in practice and was a form that everybody was used to…'*

3.9.4 Theme 4: Usefulness to inform practice

Both of the two respondents who completed the full online survey reported finding it 'easy' and 'very easy' to access the SOTOF record form. Both found it easy to understand the findings of the assessment. One reported finding the SOTOF

'*somewhat useful'* (P13) and one reported '*not very useful'* (P17) to inform their practice. When asked whether the results of SOTOF supported their approach to interventions, both participants reported 'no'. However, P13 stated '*while I have seen the results of colleges who have used the SOTOF and found these to be useful and informative, I have not had the opportunity to use the assessment with anyone on my current caseload'.* In the focus group, although few had used the tool or looked at the documentation, they had used the verbal handover to benefit their patients. When discussing the SOTOF, it was clear, participants could see the potential benefit of occupational therapists using the tool and providing advice and recommendations to support other professions' intervention planning and techniques used:

> *PO7: 'To inform treatment techniques or treatment interventions that you can use with that patient or that could be useful. Or to trigger a conversation with whoever's completed the assessment to find out if there's anything we could do to help.'*
>
> *PO3: '…and then you can plan and make a good clinical judgement on what they need.'*
>
> *PO9: 'I think it's… yeah more useful just for little bits of advice we got given. Then we were able to incorporate that into treatments with patients to make them more effective.'*
>
> *PO9: 'I think it was to do with patient's cognition and how best to, what sort of prompts to give them to best help them to participate to their greatest potential.'*
>
> *INT: …And is that something you would have picked up from your own assessments?*
> *PO9: 'To some extent but I felt like it was probably more detailed and in-depth and quite useful.'*

PO3 gave an example of how using the SOTOF with a patient allowed them to identify the particular deficits and focus their goal planning and interventions on these:

> *PO3: 'It just showed really where we needed to be concentrating with their cognitive issues. The scores show so clearly if they've got…you know, where their difficulties are. And then we could get together a better programme almost, or get together a really good programme of treatment and therapy…Erm, well I think one particular patient I'm thinking of we could see she had some y'know big spatial awareness difficulties and also some coordination difficulties and they were very clear as a result of this particular screen.'*

> *PO3: '…And we were then able to say we're going to do this repetitively and use this function more frequently and get together for an activity analysis and do quite a lot more as a result of that, so I thought that was really helpful….And with another patient she did it with they clearly had a lot less difficulties, it was a good assessment really to show that they had moved on considerably from when they were first on the ward to'.*

Two participants found specific elements or specific tasks of the SOTOF more useful than others. There are four tasks within the SOTOF, it was highlighted by the focus group interviewer that it was not a necessity to complete all four tasks, if you wanted to look at one particular area, for example; feeding, you could complete this part of the assessment in isolation:

> *PO5: 'Yeah, there's a sort of odd thing around feeding, because we don't really have a standardised way of writing, so I liked how the assessment did structure it. Maybe come up with a plan and communicate it better, so I did like that bit of the assessment'.*

> *PO5: '…I did use it for feeding where I put it behind someone's bed so that was quite nice, it was already written so I didn't have to re write it again'.*

INT: And from a Speech and Language perspective?
PO6: 'Yeah I because it's got the two sections; eating and drinking I think there are possibly not much looked at it in-depth at those sections, but there could be implications if I was going in to see someone for a swallowing assessment. See what level to go in at, certain things for therapy or strategies to implement.'

3.9.4.1 Subtheme 4.1: Documentation

During the focus group, it was highlighted that verbal handovers were most relied upon, this led on to a deeper discussion into the documentation of the SOTOF and potentially how this was a barrier to participants benefiting from occupational therapists using the tool and participants suggested ways in which they felt the documentation could be changed to enhance usability. Some comments during the focus group highlighted the benefits of how the documentation is currently laid out, one participant felt this supported the verbal handover they would normally rely on:

PO5: 'I felt like the back, the back page was quite a nice summary'.

PO5: '…But then I did like this bit from a therapist point of view when I was speaking to someone else about the case that it was all written real clearly'.

PO5: '…So we don't have anything functional wise but we do mainly cognitive assessments so they have boxes and [inaudible] *that takes time to write* [inaudible]'.

PO3: 'Yeah, I thought when we were using it, that the tick boxes worked. It was quite quick to do just one of the sections…But I do think it is clear what you see from it and I think it's y'know well documented what the issues are going to be, and then you can plan and make a good clinical judgement on what they need'.

PO5: 'I think the manuals very clear where it tells you exactly what to say and I like that aspect of it…you could be able to pick the manual and keep running

with it. And it's really clear about the prompts and the cues and things like that and the grading system and other things in the manual too'

Some participants felt the documentation could be changed to increase usability, this particularly focused on being able to easily access the recommendations provided by the occupational therapists:

PO7: 'I think if it's a question about what information people would want in the written summary then my thoughts would be something around either actions or recommendations that have come from the assessment that has been done, quite clearly written. So that if you couldn't find the person to speak to and a recommendation was 'give prompts in this way' I can then read that quite clearly and add that into a session.'

P17*: 'A clear summary of the deficits highlighted by the assessment is helpful to have in the patients' notes as well as the summary record form'.*

Participants also felt, owing to the terminology used within the tool, for those more junior or less experienced within the stroke and neurology speciality, having the glossary, which is currently in the manual, more accessible:

PO5: 'The only thing I'd add in regards to the form is if there was a definition chart especially if there were junior band fives new to stroke, they don't always know some of the terminology… I just think it would be good to be attached to the form as well… So if anyone did pick it up they've already got the terminology. Manuals get lost easily as well.'

PO6: 'It helps it be a bit more accessible to other members of the team' [*glossary being attached to the back of the form*].

P11: 'Yeah accessibility for the information is important. You know in our stroke proforma it describes what the modified Rankin score is…So it's best to have that information…Close at hand, yeah'.

3.9.4.2 Subtheme 4.2: suitable for a particular client group

During the researchers' own reflection during the data collection phase (see appendix 7), it was felt the SOTOF seemed to provide the most useful information for patients who have more complex cognitive deficits. Discussions in the focus group suggested this was felt by other professionals too. Participants highlighted that those patients who they undertook the SOTOF with and felt the SOTOF would be beneficial for, may not have been suitable for the study owing to being able to participate in the interview and have mental capacity to provide informed consent:

> *PO5: 'Yeah it's been quite useful, especially for the lower level patients.'*

> *PO5: '…And those patients haven't been properly through the study, but those patients it's worked quite well for because you're not having to go through the whole wash and dress.'*

> *PO3: 'But that possibly some of the people who haven't had capacity to give informed consent, probably are some of the people with more significant problems that would possibly be useful people to do the assessment with…We did think, when* [*the researcher*] *and I chatted about it, there are patients who don't have the capacity to consent'.*

This links to the finding from the patient participant sample group, emphasising the importance of matching the assessment to the individual and ensuring the just-right level of difficulty to engage patients and promote intrinsic motivation. This also highlights a study limitation which will be discussed later in this thesis.

3.10 Summary of MDT findings

The four themes derived from the analysis of the MDT focus group and online survey were: the reliance and importance of a verbal handover; the importance and usefulness of having a score attached to an assessment tool; the lack of awareness of SOTOF; and the usefulness of SOTOF to inform practice. Some of the key findings included how verbal handovers were used both formally and informally and were significantly relied upon rather than written communication, the usefulness of having a score attached to an assessment tool, particularly to communicate results

to other professions who are not experts in that area. Another key finding was the importance of how professionals embed a tool into practice to support the usefulness of it and how simple changes to documentation could also increase usability of a tool. These findings related to the aims of this study to explore the perceptions of the MDT with regard to the content of the SOTOF and whether they considered the summary of results useful and understandable and to evaluate if they considered the SOTOF useful for their practice. Owing to the fact the tool was not significantly embedded into the service and, therefore, there was limited awareness and use of the SOTOF, the findings from the MDT participants focused more generally on assessment tools and what MDT members felt was important and useful. However, in the focus group, there were positive conversations about the usefulness of the information the SOTOF can generate to support other members of the MDT, indicating good clinical utility and content validity.

The following chapter discusses the implications of the results within the context of relevant literature for both the findings from the patient participants (face validity) and MDT participants (content validity and clinical utility). It will also compare and contrast the findings to the 1st edition face and content validity and clinical utility studies (Laver 1994).

Chapter 4 Discussion

4.1 Introduction

The purpose of the study was to establish face and content validity and clinical utility (as defined in chapter 1.1) of the SOTOF 2nd edition and consider the implications for its use in clinical practice. Some of the themes that emerged from the data analysis had not been identified in the previous research literature reviewed; so a further literature search was completed related to these themes. This chapter will discuss each study objective in order, the first two objectives were focused on exploring face validity, the third on content validity and the final two objectives on exploring clinical utility. The researcher was drawing on a pragmatic paradigm for a mixed methods study in which qualitative and quantitative data were both valued. Doing a further analysis to examine the number of participants who referred to each of the themes and sub-themes added another level of data to the analysis and as a mixed-methods researcher, it was felt that numbers were more precise than terms like ‘a majority’ or a ‘small number of participants’, therefore, the results are often discussed as numbers throughout the discussion.

4.2 Objective 1: To explore the experiences of people with neurological diagnoses (e.g. stroke, head injury, Parkinson's disease, multiple sclerosis) undertaking the SOTOF 2nd edition – face validity

From the findings, patients overall reported more positive than negative experiences of engaging in the SOTOF. The first theme, derived from the analysis in relation to this objective, was the positive experience related to completing the SOTOF. This included positive descriptions about undertaking the SOTOF, including: comments about the length of the test and the instructions to complete the test; indications that the assessor had a significant impact on the experience; and descriptions that patients felt they learnt about themselves from doing the test. With regards to the length of the test, four participants gave positive feedback and two participants reported it feeling ‘long’. SOTOF can be completed all at once (all four tasks) as was done in this study, however, the therapist could select to complete only one of the tasks, or provide breaks, or assess over several days. Therefore, this would reduce the risk of patients feeling the test was too long for them. With regards to the instructions to complete SOTOF, nine out of ten people reported they were clear and easy to follow, supporting the face validity of the SOTOF. The second theme was the

negative experiences related to completing the SOTOF. This included negative descriptions related to undertaking the SOTOF, including: comments about the length of the test; the level of difficulty and perceived repetitiveness; and descriptions indicating that some patients found the test easy, resulting in negative feelings which provides useful information to aid improvements and considerations with the SOTOF.

4.2.1 The assessors' impact on the experience

During the interview, when patients were generally asked about their experience of completing the SOTOF, six out of the ten participants specifically commented on how they were made to feel by the assessor. For instance, SO3 said '*…there was no pressure…like I said they put you at ease actually…*' and S06 said '…*I've got confidence in the girls y'know, very confident with them which makes me feel at ease'.* This highlighted the importance of building a therapeutic relationship and how the influence of the assessor could have such an impact on a patient's experience of engaging in a test. If patients are not made to feel comfortable or at ease during a test, this could significantly impact on their scores; Owens et al. (2014) emphasised how test anxiety could negatively affect the performance of cognitive tasks. The assessor may then not obtain a true picture of the person's capabilities and a treatment plan derived from the test results may be flawed. If the therapeutic relationship is poor this may affect the adherence and / or engagement in rehabilitation and / or assessments, affecting one's experience of the assessment (Fuertes et al. 2007). Pinto et al. (2012) explored person centred verbal and non-verbal communication and the impact this has on therapeutic relationships, being encouraging and facilitating the patient were some factors found to support a positive therapeutic relationship. The GMP included in the SOTOF 2nd edition, aims to facilitate function if a person is unable to do an item on a test, allowing them to complete a task even if support is required. It was hypothesised that the graduation mediation protocol would, therefore, support the development of a positive therapeutic relationship. This relationship may impact on an individual's experience of engaging in a test like the SOTOF. Nine of the ten participants agreed or strongly agreed that engaging in the test felt encouraging and seven agreed or strongly

agreed that the test was motivating, indicating the addition of the GMP has maintained or potentially enhanced the face validity.

4.2.2 Importance and influence of building a positive therapeutic relationship

The alliance in therapeutic relationships was first derived from theories of transference, which raised the importance of collaboration, warmth and support outlined by Freud in 1912 (Freud 1958; Greenson 1967). The importance of a good therapeutic relationship continued to be highlighted by Bordin (1979) and Greenberg and Webster (1982) when they discussed the relationship with patient and therapist and the impact of this on treatment outcomes and the therapeutic process. Gaston et al. (1994) and Taylor et al. (2009) highlighted the association between positive health and rehabilitation outcomes, patient engagement and positive therapeutic relationships. White (2011) recognised the need for a positive and solution focused approach when interacting with patients to enhance rapport. Giving patient's time, active listening and personal attributes were three of the skills used to enhance the therapeutic relationship, specifically around engaging patients in occupational therapy assessments. The first level of the GMP in SOTOF is a 'general verbal cue' and an example given for the therapist to use is 'take your time'. Therefore, the findings indicate the SOTOF is supporting the development of therapeutic relationships, enhancing the patient's experience and this indicates good face validity. Use of personal attributes is also supported by Vergeer and MacRae (1993) who suggests the use of humour as a holistic approach has been useful when assessing cognitive function. However, this may be difficult to employ with the SOTOF, owing to the standardised elements and the use of the GMP. Developing a positive therapeutic relationship built on mutual trust to achieve interaction and teamwork, has shown to be important to find the right way for occupational therapists working with stroke patients to motivate them, support them to set goals and adjust intervention programmes (Gahnström-Strandqvist and Tham 2000 and Guidetti and Tham 2002). Cole and McLean (2003) also suggested there is a link between quality of the therapeutic relationship and functional outcomes, and raises the importance of establishing a trusting rapport between therapist and patient. They identified collaboration, communication, empathy, understanding and respect as some of the required skills to do this. In a study exploring therapeutic use of self, Taylor et al.

(2009) suggested that more focus needs to be put on education regarding ‘use of self’ and further research into understanding how ‘use of self’ affects therapy processes and outcomes. These studies demonstrate the impact that positive therapeutic relationships can have on patient outcomes. If there is a poor therapeutic relationship, some aspects of a test potentially might not be assessed fully which would impact on a test’s validity, reliability and usefulness.

Hall et al. (2010) suggested providing positive feedback, answering questions and providing clear instructions are positively correlated with a good working relationship and patient satisfaction. In this study, 90% of participants felt the SOTOF instructions were clear and easy to follow; this is likely to enhance the face validity of the tool as the participant being able to understand and follow instructions could lead to a more positive experience. It does not state in the SOTOF manual that the therapist should feedback and discuss the results of the test with the patient; however, it would be good practice to do this. This could be added to the manual as a prompt for therapists. Several studies also found significantly positive associations between good therapeutic relationships and patient adherence, mood and therapeutic improvements (Schonberger, Humle and Teasdale (2006 a; 2006 b; 2006 c). Hush, Cameron and Mackey (2011) found three areas that were key determinants of patient satisfaction, one of these was the interpersonal aspects such as physiotherapists showing empathy and effectively communicating. This demonstrates again the importance of this element of care. Several other studies also recognised that some of the key attributes to patient satisfaction related to interpersonal skills, for example: professionalism; friendliness; caring (Casserley-Feeney et al. 2008); effective communication; educating patients; involving patients in decision making; individualised care; and competence (May 2001; MacDonald, Cox and Bartlett 2002; Cooper et al. 2008, Hills and Kitchen 2007; Clair and Hancock 2008). A qualified occupational therapist would be expected to have a lot of these skills and abilities owing to the training programme they undergo (RCOT 2019). For example, occupational therapists have specialist knowledge regarding the use of clinical reasoning, therapeutic use of self and activity analysis (Arbesman et al. 2014).Using the GMP, the dynamic element of SOTOF, will likely increase the extent to which these skills are used as there is more mediation between patient and therapist in this type of assessment.

Pinto et al. (2012) found three key factors that showed significant positive associations with therapeutic relationships: discussing options / asking patient's opinions; encouraging questions / answering clearly; and explaining what the patient needs to know. Nine out of the ten participants agreed or strongly agreed that participating in the SOTOF was 'encouraging'. It was hypothesised that using the GMP would support patients to feel motivated and encouraged, and ultimately improve face validity, as they were supported by therapists to complete tasks, rather than a patient being unable to do a task and then simply moving on to the next. Pinto et al. (2012) also recognised body posture and orientation can be a determinant of therapeutic relationships; for example body orientation away from the patient has a negative association with developing a therapeutic relationship. There is not a specified position in the manual for therapists to follow when administering the SOTOF, however, due to the set-up of the items for the tasks, it is likely the therapist would be sat to the side of the patient or opposite the patient. This could be added in the instructions at the start of each task to ensure the body positioning is optimal for the task and to enhance therapeutic relationships.

Positive therapeutic relationships between therapists and patients is a well-established factor in patient experience (Hush, Cameron and Mackey 2011), the findings from this study reiterate this is the case not only during rehabilitation stages of therapy but also during the assessment stages. This emphasises the importance of therapists' self-awareness and building therapeutic relationships. The SOTOF (2nd edition) has a dynamic element to the test, the GMP, allowing patients to complete test items and the task, even if they require full assistance, rather than moving on to the next test item without completing a task and risking the person experiencing a sense of failure. In the SOTOF 1st edition face validity study (Laver 1994), the therapist and patient relationship was not such a prominent factor in the findings, potentially suggesting that the new dynamic element enhances the building of rapport between patient and therapist. The SOTOF manual describes how to administer the GMP to increase consistency between therapists, therefore, contributes to the face validity. Dynamic assessments remove cultural and educational bias, as service users can learn, adapt and receive feedback throughout and therapists can understand how the service user learns best and what level of support is required (Uprichard et al. 2009). Using dynamic, rather than static,

assessments allows the clinician to focus on individual variations, changes and barriers to performance and explore how individuals can improve their performance with some form of guidance instead of focusing on normative data and typical performance (Toglia and Cermak 2009; Cotrus and Stanciu 2014). Owing to the interactive element of dynamic assessments there is opportunity to maximise engagement and motivation (Toglia and Cermak 2009; Cotrus and Stanciu 2014).

In summary, the dynamic approach (structured through the application of the GMP) used in the SOTOF provides an opportunity for the therapist to build a positive therapeutic relationship with the patient, indicating good face validity. This is then likely to increase the patients' engagement and motivation within the assessment. A poor therapeutic relationship could impact on test results which ultimately impacts on the tests face validity. It is important to ensure the therapist feeds back the test results to the patient to support the relationship; it would be beneficial to add to the SOTOF manual that therapists should discuss the SOTOF's results with their patients, as a prompt for therapists to do this.

4.2.3 The importance of the 'just-right' challenge

It was hypothesised that the use of the GMP in SOTOF could help therapists to identify the just-right challenge for interventions, therefore, indicating good face validity. Molineux (2017 p.16) describes the just right challenge; 'a concept in occupational therapy intervention that captures the delicate balance between providing experiences that are challenging for clients, yet still achievable'. The role of the occupational therapist is to assess a patient's abilities and the demands of the experience / task and then select treatment activities that provide enough challenge but not so difficult the patient may give up (Allen, Blue and Earhart 1998; Nelson and Jepsen-Thomas 2003), thus promoting the patients' self-efficacy, self-esteem, self-satisfaction and motivation (Radomski and Trombly-Latham 2008). Using the just-right challenge approach ensures patients can work towards reaching their goals in a comfortable, non-threatening environment, promoting active participation (Breines 2006; Case-Smith 2010). In Rowe and Neville's (2018) study they found that those patients who did not have support to adapt or grade a task did not get a sense of achievement or mastery, however, those who understood the 'just-right' challenge

did. The GMP in SOTOF allows the therapist to adapt and grade a task, therefore, this could enhance a patients feelings of achievement. The SOTOF's screening test helps the occupational therapist to identify patients who may not manage to attempt the test and identify which instructions to use, for example, verbal or written.

One of the study's inclusion criteria was that participants must have mental capacity to provide informed consent. This criterion excluded many patients who may benefit from SOTOF. It should be noted that if it was identified that a patient would benefit from the SOTOF, but they did not meet the inclusion criteria, those patients were still assessed using the SOTOF as standard practice. Throughout the study, it became evident that those patients who were eligible for the study tended to be patients who were less cognitively impaired and were able to engage in the interview process. As highlighted in the background to this study, the SOTOF is useful for highlighting cognitive and perceptual deficits. It was found that many patients that the SOTOF would be most useful for, were those who did not fit the study's inclusion criteria. It may be useful in future research to explore the face validity of SOTOF 2nd edition with those who lack capacity, this population tends to be under-researched, however, there would be additional ethical considerations. Consent could be sought from a doctor or family member and the data collection method or timing may need to be different. Dobson (2008) discussed the role of a research consultee when undertaking research with those who lack capacity. However, this provides an understanding as to why the test being 'too easy' became a sub-theme, with seven out of the ten participants specifically commenting that the test was 'easy'. With regard to the responses to the descriptor words, six participants agreed the test was 'easy' and one strongly agreed the test was 'easy' (see Figure 5 in section 3.3.). All participants were neutral or disagreed with the word 'difficult'. In the wider interview, S02 said *'In some respects a little bit too easy'* and S07 *said '…a whole lot of it was easy'.* However, the test feeling easy for some was not always reported as a negative experience; some participants felt the test gave them an opportunity to demonstrate their capabilities, suggesting this was a positive experience. This will be discussed further in sections 4.2.4 and 4.3.1.

Across both sample groups (patients and MDT participants) it was found that the patients who were identified as fitting the inclusion criteria were not necessarily those patients that would benefit most from the SOTOF, thus, the test being too easy for some patients in this sample. During the MDT focus group, it was raised that the test would be best for *'the lower level patients'* (PO5), the patients who had more significant deficits post stroke. However, the therapist should be conscious that they are not making assumptions about a patient before assessing them, for instance, perceptual problems are not always obvious and using the SOTOF to assess a patient may identify this as a deficit. Patients completing assessments that are not specifically directed to their abilities can impact on their engagement and intrinsic motivation with the assessment (Boyt Schell et al. 2014). The 'just-right' challenge is, therefore, a key element to identifying the right assessments to use with patients. This can be difficult at the assessment phase, as a therapist does not fully know a patient's deficits and strengths, particularly those deficits which are not visible. The GMP in the SOTOF (2nd edition) supports the therapist to find the just-right challenge. The SOTOF screening test can be completed when the therapist does not already know the patient to assess if the patient would find the SOTOF too difficult. However, during a training session with occupational therapists using the SOTOF (2nd edition), one occupational therapist who had used the test found that one of her patients had right / left discrimination which she had not recognised in other functional / cognitive assessments she had used with the patient. She reported feeling that the SOTOF potentially would be too easy for her patient, however, recognised if she had not completed this test, the deficit may have gone unnoticed. On the other hand, one patient stated the test felt *'demeaning'*, this could suggest the test felt too easy for her leading to a negative experience. This could be avoided by how the test is explained by the occupational therapist before they administer the test, there are currently instructions at the start of the screening test, however, it might be that these instructions need to be more specific. The test, although featuring PADL tasks, also looks at the wider cognitive, perceptual and sensory deficits with subtasks before the completion of the actual task. For example, patients are asked to put the spoon on the left / right / inside / behind / in front of the bowl and asked to mimic the use of a spoon to establish any potential deficits with right / left discrimination, spatial relations and apraxia.

One participant commented about the test feeling repetitive (SO5), this may also link to the test feeling 'easy' for them, this particular participant did not disagree to the test being 'difficult' but agreed to the test feeling 'easy'. One participant agreed they felt the test was 'boring' (see figure 4 in section 3.3), this was a different participant to the one who felt the test was repetitive. The SOTOF has similar instructions in all four tasks as some elements of the tasks are assessing the same skills. For example, in all four tasks patients are asked to put an item on the right / left of another item. Weston (2019) completed a study which explored the test-retest reliability and internal consistency of SOTOF (2nd edition) for people after stroke. This study confirmed that all four tasks were essential to administer even though some item elements are measuring the same deficits although they have parallel forms. Some task items ('visual attention', 'visual object agnosia' and 'colour agnosia') were identified as being suitable to omit in task three and four, therefore, the therapist administering the test could omit the items identified by Weston (2019) in task three and four preventing reassessing an item which is too easy or too demanding and reducing risk of the test feeling repetitive for the patient.

In summary, the GMP supports the therapist to find the just-right challenge. It is important to note that although some patients found the test easy, they did not score zero (independent) with all subtasks and undertaking SOTOF indicated some deficits, which then the therapists were aware of and could take into account in treatment planning and intervention. A significant point from this is that therapists need to ensure they explain the test clearly to patients to make it clear that, although the patient may find elements of the test quite easy, some may be more difficult and explain that the test will not only assess their ability to complete a PADL task but also assess their wider cognitive, perceptual and sensory skills. It would be beneficial for this to be explained in the SOTOF manual to ensure patients fully understand the reasoning for completing the SOTOF, therefore, enhancing the face validity.

4.2.4 'It gave me chance to shine'

One of the participants (SO9) made a comment *'…it gave me chance to shine'*. This was not elaborated on during the interview, so it is unknown what the participant

particularly meant. One way this statement may be interpreted is with regard to having limited opportunities to shine in the hospital environment. A hospital environment is not the most occupationally enriched environment for assessing or treating people; Skubik-Peplaski (2012) discussed this and explored the benefits of using a home-like environment when assessing / treating people with stroke. They established that patients were more engaged in a home-like environment. They also identified that the environment tended to dictate the chosen assessment / interventions that occupational therapists were using, rather than the clinical reasoning influencing their choices (Skubik-Peplaski 2012).

The environment can be limited for rehabilitation as some patients may have a loss of identity and roles when admitted to hospital. They may experience occupational alienation with a loss of control, isolation and an inability to participate in meaningful and enriching occupations (Townsend and Wilcock 2004), ultimately inhibiting health and wellbeing (Brown and Hollis 2013; Hocking 2014; Wilcock and Hocking 2015). Patients may experience a loss of control, such as not being able to use the toilet when they need to (as they may be told they need to wait for someone to assist them), and mealtimes are determined by the ward routine. This can increase the risk of functional decline, not purely due to the illness that led to the admission to hospital, but through the impact of being hospitalised itself (Cornette et al. 2006; Mercante et al. 2014). This emphasises the need for health professionals to support patients to engage in meaningful occupations that give them a chance to show what they are capable of doing, whether it be the whole or elements of a task, rather than doing tasks for them. The SOTOF focuses on personal activities of daily living, focusing on functional tasks; some other assessments used to assess cognitive, perceptual, sensory and motor function use less functional based exercises, using ‘table-top’ tasks, for example; the Cognitive Assessment of Minnesota (CAMS; Rustad 1993) uses a maze to assess planning and copying building blocks to assess problem solving. The findings from this study suggests patient’s benefit from engaging in functional tasks that allow them to show their capabilities. The SOTOF involves functional tasks and offers patients the opportunity to succeed in all tasks and a ‘chance to shine’, even if support is required; this supports the face validity of the SOTOF 2nd edition.

4.3 Objective 2: To explore the perceptions of people with neurological diagnoses (e.g. stroke, head injury, Parkinson's disease, multiple sclerosis) on the purpose of SOTOF 2nd edition – face validity

Of the ten participants, six referred to the purpose of the SOTOF being to understand how capable they were to complete everyday tasks. One mentioned assessing physical ability, two mentioned mental capacity or cognitive ability. The SOTOF simultaneously evaluates performance of four personal activities of daily living and generates information related to underlying perceptual, cognitive, sensory and motor performance components. Therefore, participants recognised the purpose of SOTOF was to assess their capability of undertaking personal ADL, supporting the face validity of the SOTOF. Whilst a few also identified that specific areas of their functional ability, such as physical and cognitive function, were also being assessed through SOTOF. White (2011) recognised the importance of patients understanding why they are completing a test, as they can become negatively focused and potentially disengage from the test if they are unaware of the reasoning. Although, participants did not identify learning about their abilities and / or disabilities as a purpose of the test, this theme became evident during the data analysis, as six out of the ten participants made specific comments about how they had gained something from completing the assessment, indicating good face validity from the patient's perspective. This will be further discussed in relation to objective two, this will then lead on to further discussion regarding the assessment approach.

4.3.1 Learning about their abilities / disabilities from engaging in the assessment

One theme that derived from the data analysis was related to participants gaining insight into their own abilities and deficits whilst undertaking the SOTOF. Interestingly, this was not reported in the Laver (1994) study and so this raises the question as to whether the inclusion of the GMP and formalised dynamic assessment element has added to how patients may learn about their own ability or disability when undertaking SOTOF. This links to objective two, as this could be a purpose or benefit for some patients for completing the test. One participant suggested that undertaking the test had been a positive experience as it had given him an opportunity to show what he was capable of doing. This is significant, as many standardised assessments are deficit focused and are used to highlight what a

patient cannot do rather than highlight both deficits and abilities. Deficits from assessments tend to be what is discussed when patients complete an assessment rather than educating patients on what skills are intact. The instructions for therapists completing the neuropsychological checklist, part of the SOTOF scoring form, was updated for the 2nd edition to suggest therapists indicate the cognitive, physical, perceptual and sensory domains that are intact (with a tick) as well as identifying areas of deficits (with crosses). Therefore, rather than only marking the deficits in the SOTOF 2nd edition, therapists can choose to differentiate between skills and deficits using ticks and crosses. Not focusing entirely on a patient's deficits could enhance patient experience, in turn face validity. This participant's comment might suggest that opportunities are limited for patients to show what they are capable of doing; this was also a finding with regards to objective one (4.2.4). Some patients after having any form of brain injury may have difficulty with their insight (Headway 2016) and the understanding of their deficits and the impact of these on occupational performance. Eslinger and Chakara (2004) suggest that relying on self-report assessments can often lead to an underestimation of their abilities, particularly with those with cognitive deficits. Conversely, patients who lack insight can overestimate their abilities. When the results of SOTOF are then discussed with the patient, this may support building their insight into their deficits and strengths. One of the patients in the study had very little insight into her cognitive deficits and during the assessment she began to recognise that the simple tasks she assumed she would manage easily were quite difficult for her. Eight of the ten participants agreed or strongly agreed the test was useful. This, therefore, supports the face validity of the SOTOF (2nd edition) as the patients potentially can find the test useful to inform their understanding of their abilities / disabilities.

4.3.2 Deficit focused assessments versus strength-based assessments

Some assessments focus entirely on 'the problem' areas, reinforcing that this should be the focus of attention, and ultimately this could have psychological consequences, whereas, a strength-based approach shifts the focus onto what is intact (Pattoni 2012). Strengths-based approaches concentrate on the strengths of a person and how these strengths can aid recovery, it is also suggested that this approach has a positive psychological impact (Graybeal 2001; Smock et al. 2008). Graybeal (2001) encouraged the use of frameworks incorporating both strengths and

weaknesses to allow for a balanced assessment. The GMP in SOTOF enables a more detailed assessment as the therapist can identify what the person is able to do with different levels of mediation. This is also part of the rationale for encouraging therapists to tick the 'intact skills' on the neuropsychological deficit table on the result form. A key element to strengths-based assessments or approaches is to encourage individuals to recognise and understand their own strengths to allow them to use these skills to overcome barriers (Park and Peterson 2006; Rapp, Saleebey and Sullivan 2008). This, therefore, is why this approach is favoured from an organisational perspective to develop services focused on prevention and independence (Scottish Government 2010). Cowger and Snively (2002) highlighted that assessment tools are often focused on deficits alone but recognised the push to incorporate strength elements at that time. Nel (2017) completed a study comparing an asset-based approach and a needs-based approach in a community development. The asset-based approach allowed participants to engage and drive their own projects, whereas, those in the needs-based approach were driven by organisations, based on the needs and problems in the community. This demonstrated that those who focussed on their own strengths and the strengths around them were more empowered and engaged. In relation to the SOTOF (2nd edition), 70% of the participants reported the experience as being motivating and 90% reported the experience as being encouraging. This indicates good face validity as the updated dynamic elements of SOTOF maintain and potentially enhance the patients' experience of undertaking the test.

To summarise, the majority of patients were able to identify the purpose of the SOTOF, which indicates the 2nd edition has face validity. It is recommended that further information is added in the SOTOF manual or on the instruction card to ensure therapists explain the purpose of the test in a more consistent way as a minority of participants did not identify the SOTOF's purpose.

4.3.3 Comparison of SOTOF face validity studies

There are three SOTOF face validity studies that will be compared and contrasted in this section. The SOTOF 1st edition face validity study (Laver 1994), the 2018 study on the SOTOF 2nd edition (Booth et al. 2018) and this current study.

The face validity patient interview schedule for the current study was taken from the 1st edition by Laver (1994; see section 1.2.1) with additional questions, and experience words for the level of agreement questions (see appendix 13), refer to 2.4 for the rationale for these additions. Participants were given a selection of words (that described potential feelings related to undertaking the SOTOF) in both studies, with eight additional words added for this study, for them to agree / disagree with. In this current study, a Likert scale was introduced in the questionnaire owing to feedback from a statistician during the ethics review process. The words that were presented to participants in both studies have been collated in table eight. Table eight also shows the comparisons with findings from Booth et al's. (2018) face validity study on the SOTOF 2nd edition. In Booth's (2018) study, four participants were recruited from two charities, only one of the patients had a neurological condition (mild onset dementia). The other three participants had rheumatoid arthritis, osteoarthritis and / or pulmonary fibrosis. The SOTOF demonstrated it was sensitive at identifying neurological deficits for the patient who had the neurological diagnosis (dementia) in their study. In the 1st edition study the patient sample comprised 15 male and 25 female subjects between the ages of 62 to 87 years (mean 74.7, s.d. 6.92). In the 2018 study the sample comprised three females and one male between the ages of 62 to 77 years (mean 70, s.d.6.14). In the current 2nd edition study the patient sample comprised five male and five female subjects between the ages of 67 to 92 years. Although the sample size was much bigger in the 1st edition study the ages of participants were similar. There was also no evidence to suggest the level of education impacted the experience of engaging in the test. In table eight, the sample size differences need to be taken into account when comparing the percentages. For instance, one participant with a different rating in the current study sample made a bigger difference to the percentage for that sample as there were only 10 participants compared to Laver's (1994) sample of 40 patients. This is an even greater consideration for Booth et al's. 2018 study, as there were only four participants. It should also be noted that some participants did not give an answer or opted for 'neutral' to some words, so percentages in the table do not always equal 100. The table demonstrates that for all three studies, more people agreed with the positive descriptive words and disagreed with the negative descriptors. The 5 point Likert rating scale was collapsed in table eight to allow for comparisons. If the participant selected 'agree' or 'strongly agree' this would classify

in table eight as ‘agree’. Similarly with the ‘disagree’ and ‘strongly disagree’, both were classified as ‘disagree’ in table eight.

Table 8: Comparison of 1st/2nd edition face validity studies word descriptors

Did you find the assessment….?	**1st edition study (Laver 1994; n = 40) Yes / Agree**	**2nd edition (Booth et al. 2018; n=4) study Yes/ Agree**	**Current 2nd edition study, n=10 Yes/ Agree**	**1st edition study (Laver 1994; n=40) No / Disagree**	**2nd edition study(Booth et al. 2018; n=4) No / Disagree**	**Current 2nd edition study, n=10 No / Disagree**
Easy	77.5%	75%	70%	17.5%	0%	20%
Upsetting	7.5%	0%	0%	87.5%	100%	90%
Enjoyable	85%	75%	60%	7.5%	0%	10%
Difficult	15%	0%	0%	80%	100%	70%

Boring	15%	0%	10%	80%	100%	50%
Stressful	12.5%	0%	0%	82.5%	100%	100%
Useful	87.5%	50%	80%	7.5%	50%	10%
Interesting	87.5%	75%	70%	7.5%	0%	20%
Relaxing	75%	50%	60%	17.5%	25%	20%

In this study, there were five questions that were added (questions 2, 3, 5, 8 and 9; please see appendix 3). These questions were around participants' feelings of engaging in SOTOF, following the instructions, their knowledge of undertaking other assessments, opinions on the length of the test and whether they required breaks. The questions regarding following instructions and the length of the test were also asked in Booth et al's. (2018) study; all four participants (100%) in Booth et al's. study reported the instructions were easy to follow. In this study, 90% of participants also commented on the instructions being clear and easy to follow. In the Booth et al's. study, three (75%) participants felt the assessment time was comfortable. In this study, 80% of participants felt the length of time was appropriate, which shows a similar finding. This additional information provided a more rigorous approach to explore the patients' experience.

In the 1st edition study (Laver 1994), none of the patients reported any negative responses when asked about their thoughts of SOTOF. When participants were asked what they thought the purpose of the SOTOF was, 75% gave general descriptions about testing their ability, 10% reported it was to assess ability with everyday tasks (see appendix 14). In Booth et al's. (2018) study, one participant did not know what the purpose of the assessment was, the other three participants reported the purpose was to: 1. assess motor skills; 2. to find out what they can and cannot do; and 3. how they can move / lift items and know their left from right. Similarly to the 1st edition study, in this current study the highest percentage were participants referring to their ability to complete tasks. None of the participants in the 1st study or Booth et al's. (2018) study reported the reason as being assessing

progression, however, this was a purpose identified by one participant in this study. All these responses from the three studies were correct to some degree in terms of the purpose of the SOTOF, given that the SOTOF assesses a wide range of function and related skills and neuropsychological deficits. With regards to the question about the activities being familiar to participants, in the 1st edition study (Laver 1994), 95% felt the activities were normal to them. In the 2018 study all participants agreed they were familiar activities to them. Only 60% reported they were normal activities to them in this study. However, two participants in this study did not provide an answer for that question.

Overall, all three face validity studies demonstrated that more participants agreed with the positive words and disagreed with the negative word descriptors showing the additions made to the SOTOF have not negatively impacted the patient experience and face validity. With regards to following the SOTOF instructions, both face validity studies (Booth et al. 2018 and the current study) that examined this established 90% or 100% found the instructions clear and easy to follow. The questions related to length of the test showed similar results with 75% and 80% feeling the length of time taken to do the SOTOF was appropriate. The 1st edition (Laver 1994) and current study found similarities with participants' understanding of the purpose of the test. This demonstrates that adding the GMP has not affected the face validity in a negative way, it has in fact, potentially, increased the face validity by providing the opportunity for mediation and giving the patients the chance to demonstrate what they are able to do, making them feel more encouraged and motivated.

4.4 Objective 3: To explore the perceptions of the staff working in a stroke rehabilitation multi-disciplinary team on the content of SOTOF – content validity

The first theme identified relating to this objective was the importance of having a score attached to an assessment tool, particularly to benefit other professions to understand assessments' results. A lack of awareness of SOTOF by MDT members, either before the study, on the ward and / or during the study, was evident, limiting the data on how the content of the SOTOF had impacted on wider MDT practice. This highlighted the importance of embedding a test into practice to increase

usability; this will be discussed further in the conclusion chapter in the implications for practice (section 5.5.2). This current section will also compare and contrast this study with the SOTOF 1st edition's content validity studies.

4.4.1 Importance of having a score attached to a test

Having a score attached to a test was reported by some participants in the MDT focus group to be useful for the professionals who conduct the assessment and for colleagues from other professions to understand test results. Other professionals can use the content of the SOTOF when planning their own interventions, for instance, knowing a patient had a perceptual deficit and taking that into account when assessing or developing a treatment plan for a patient. Law (1987), in a seminal piece of literature, reiterated that the ability of results to be easily communicated to others is vital in assessment selection. The SOTOF (2nd edition) now has a scoring system that provides item scores and an overall score for each of the four tasks which indicate how independent a patient is with each task.

Occupational therapists often use functional observation assessments to assess a person's occupational performance but which do not provide a score (Wales et al. 2012). Koh et al. (2009) found occupational therapists relied more on observational assessment rather than standardised assessment. Holmqvist, Kamwendo and Ivarsson's (2009) findings also supported this and suggested that occupational therapists are reluctant to use standardised assessments. Although a dated piece of literature, Law and Letts (1989) recognised the importance and usefulness of observational assessments, specifically within a person's natural environment. However, they also highlighted the weakness of using observation assessments alone as it can be difficult to assess patient outcomes. Fricke and Unsworth (1998) concluded that 71% of therapists reported using observation of performance frequently and only 11% reported using standardised assessments frequently. Participants' perceived accuracy of observation of performance was 64% excellent accuracy, in comparison to the perceived accuracy for standardised assessment which was 22% excellent accuracy. This may highlight why therapists relied more on observational functional assessments over standardised assessments. As reported earlier in this thesis, the RCP (2016) stroke guidelines recommend occupational

therapists should use a standardised assessment tool to assess activities of daily living. Bowman (2006) and Van Peppen et al. (2008) stated that use of standardised functional assessments in allied health professionals is low and recognised lack of time, resources and limited knowledge of tools are some of the barriers to use. Bowman's (2006) study was completed in a stroke rehabilitation setting and concluded that education was required for occupational therapists to measure clinical outcomes. More recently, Burton, Tyson and McGovern (2012) explored therapists' use of outcome measures in stroke rehabilitation, and, although measures were being utilised, they found that there was little consistency. There are drivers for outcome measures to be used in services (NICE 2016) to establish how successful their interventions are to prove their worth. For assessment tools to be easily used as outcome measures, a score is required. Therefore, from a usefulness perspective the SOTOF is now better suited to be used as an outcome measure, enhancing its clinical utility (a focus of objectives 4 and 5). However, further studies exploring the reliability of the SOTOF 2nd edition are now needed.

4.4.2 Comparison with SOTOF 1st edition content validity studies

This chapter will now discuss and contrast this current study and the SOTOF 1st edition content validity study (Laver 1994).The content validity study from the first edition was not replicated directly for the 2nd edition study. Firstly, the standardised SOTOF test items (scored able or unable) have remained the same in both editions; secondly, all the items identified in the neuropsychological checklist remained the same; and thirdly the main aspect of interest for this study was the addition of the GMP and formalised dynamic assessment process to be used when a person is unable to do a SOTOF test item. In the 1st edition study, content validity was considered to be high and no recommendations for changes were made (Laver 1994). In a further SOTOF 1st edition content validity and clinical utility study (Laver 1994) the therapist's perceptions of the constructs and behaviours assessed were explored (please refer to section 1.2.1). The 1994 and 2018 study used occupational therapists and occupational therapy students who undertook the SOTOF with patients or community dwelling frail older people, whereas this study collected feedback from the MDT. Therefore, owing to the differing focus and designs, the results from this MDT focus group and survey study are not directly comparable to the results from the SOTOF 1st edition content validity study.

Owing to the MDT focus group participant's in this study having limited knowledge of SOTOF and that only one participant (who was an occupational therapist) had used the SOTOF, it was not possible for the participants to comment in any depth on the content validity of the SOTOF. Instead, this study has provided a wider MDT perspective, the focus group discussed assessments in general and also what an MDT would want from an assessment. For example they mentioned the value of scores and verbal handover for sharing test results. They also explored what they felt would make SOTOF more accessible and increase its usability, for example, being able to easily access the recommendations, or for the glossary being part of the record form rather than in the manual.

The researcher considered that the additional GMP and scoring system might provide more useful information (than the SOTOF 1st ed), not only to inform occupational therapy goal setting and interventions but also for other professionals and carers; for instance, the therapist may identify the patient responds best from gestural cues rather than verbal instructions. As assessment results shared by occupational therapists during handovers were not explicitly communicated as coming from the SOTOF it was not possible to explore whether SOTOF results influenced the practice of the wider MDT.

4.5 Objective 4: To explore if staff working in the stroke MDT consider the SOTOF scoring form and summary of results useful for their practice – clinical utility.
Objective 5: To explore if the staff of the stroke MDT consider the SOTOF useful for informing goal setting in rehabilitation and treatment plans – clinical utility

The findings for objective four and five were considered and analysed separately, however, there was considerable overlap and, therefore, the objectives will be discussed together.

The first theme relating to objectives four and five was the reliance and importance of a verbal handover, verbal handovers were primarily used between MDT members to share information, both within formal meetings (e.g. MDT meeting) and informally during everyday practice. The second theme was the usefulness of SOTOF to inform

practice; this related to the handover of patient's SOTOF results so other MDT members could benefit from the results to inform intervention planning. The third theme, was a sub-theme regarding documentation, this appeared to be a potential reason why MDT participants may not be accessing and benefiting from occupational therapists using the SOTOF is this setting. Suggestions for how SOTOF documentation could be changed to enhance usability were provided.

4.5.1 The reliance and importance of a verbal handover

Throughout the focus group, it became clear that many MDT members were reliant on verbal handovers, rather than reading other professionals' written documentation. Hripcsack et al. (2011) concluded that 80% of nurses' documentation is not read by physicians. There is limited evidence on therapist's use of MDT documentation; more evidence is available for medical professionals. However, Aragon-Penoyer et al. (2014) completed a study specifically on rehabilitation documentation and reported that 23% of clinical practitioners read the documentation and 67% review other disciplines documentation. Although the following literature is primarily based on studies with medical participants, the 'handing over' process for sharing information is considered similar to that involving therapists, as it requires the passing on of important information regarding patients and their care. Several studies concluded that a combination of both verbal and written communication is preferred and considered most beneficial (Poletick and Holly 2010; Street et al. 2011; Bakon et al. 2017). However, many studies argued that purely face to face communication is preferable. Baron and Byrne (2004) and Solet et al. (2005) highlighted the importance of body language, posture, gesture, eye contact and facial expressions to provide extra information regarding the importance of information and to allow MDT members to interpret the information being exchanged. It is argued that through written documentation the number of communication channels is reduced which could lead to misinterpretation and assumptions being made (Haldis and Blankenship 2002; Baron and Byrne 2004). Giske, Melas and Einarsen (2018) emphasised that face to face discussions or handovers allow professionals to discuss and problem solve, improving collaboration.

Poor communication, both written and verbal can result in serious adverse events, poor quality care (Hesselink et al. 2012) and limited information available for decision-making (Aaragon-Penoyer et al. 2014). In the focus group, MDT meetings were discussed as an opportunity for important information to be shared and discussed. Giles (2016) recognised the importance of an MDT meeting being well-led to allow non-medical aspects to be addressed, for example, therapy progression, goal setting or discharge plans. Giles (2016) concluded that those MDT meetings which were well-led improved communication with patients and families and also coordination between MDT professionals.

It was clear that in this study many of the MDT participants relied on verbal communication, however, often the information was available in the ward notes. Participants used verbal handover of information from other members of the MDT to inform their intervention plans. The information the SOTOF can provide, therefore, could support other professionals and their clinical practice. However, because staff focus on communicating the findings rather than naming the assessment which informed the findings it was not clear if SOTOF results had informed the practice of other members of the MDT. If the information from SOTOF results was not being handed over verbally it could be hypothesised that other MDT professionals were not aware of this information/recommendations in the occupational therapists' notes, and this could negatively impact patients' care. Some MDT members were not aware of the SOTOF, so although the SOTOF record form for patients who had undertaken the assessment was available in their notes it appeared that the findings had not been accessed and used by other professionals. In order to enhance clinical utility and for the information and recommendations of the SOTOF to be beneficial for other professionals, the awareness of the SOTOF by the whole MDT needs to be improved and occupational therapists should ensure key findings are shared through verbal handover to improve usage of the results.

4.5.2 Usefulness to practice

This theme related to the use of the verbal handover of a patient's SOTOF results so other MDT members could benefit from the results of the tool with their patients and the use of SOTOF to support their intervention planning. Of the two respondents who

completed the full online survey, both found it ‘easy’ and ‘very easy’ to access the SOTOF record form, both found it easy to understand the findings. One found the SOTOF ‘somewhat useful’ and one reported ‘not very useful’ to inform their practice. Both stated it had not supported their approach to interventions. In the focus group, it was clear that very few participants had used the SOTOF or looked at the SOTOF record form in patient’s notes. Where they were aware of the findings they had obtained these through verbal handover. As the occupational therapists did not name the assessments they were using during verbal handover, it is unknown if the information they were sharing with other professionals was gained from SOTOF results or from other assessments. MDT participants discussed the value of information shared by occupational therapists to inform their practice with patients so they may have benefitted from the occupational therapist using the SOTOF, but they would not know this and this may be the reason for their limited knowledge of the SOTOF. Different professions are likely to focus on different areas that are most relevant to them and they may not feel it is important to understand which assessment the occupational therapist used to get to this information. For instance, a physiotherapist may want information on the key parts of cognition that are specifically useful to their sessions, such as, right / left discrimination or apraxia. Participants in the focus group indicated they could see the potential benefit of occupational therapists using the SOTOF and then providing advice and / or recommendations to support other professions’ intervention planning and techniques. Two participants found specific elements of the SOTOF tasks more useful than others. For instance, PO5 stated ‘there’s a sort of odd thing around feeding, because we don’t really have a standardised way of writing, so I liked how the assessment did structure it’. PO6, who was a speech and language therapist also found the feeding task most appropriate for her, ‘I think they are possibly not much looked at in-depth at those sections [*related to feeding]…see what level to go in at, certain things for therapy or strategies to implement’. Although SOTOF has four PADL tasks, not all four tasks must be completed for the assessment, and a therapist could select the task(s) which is/are most appropriate for the person.

The focus group discussion, indicated that the insertion of the GMP into the SOTOF (2nd edition) and the identification of strategies and recommendations from the occupational therapists could inform other professionals’ practice and benefit the

patient. However, this could not be established as happening in practice within this study because the SOTOF was not named during verbal handovers.

4.5.3 Documenting SOTOF assessment results

One of the changes to documentation that was highlighted in the focus group involved the front summary page having an ‘action’ or ‘recommendation’; therefore, if an MDT member could not speak to the occupational therapist then the recommendation would be clear and accessible. The current SOTOF summary is at the front of the record form to allow it to be seen first and this has a box to summarise findings from completing the assessment, it is expected that an occupational therapist should incorporate their suggestions and recommendations into this area. However, this box does only say ‘summary’, adding the word ‘recommendations’ may prompt the therapist to provide more specific recommendations owing to their findings. Another documentation improvement highlighted in the MDT focus group, was to provide a clear summary of the deficits identified in the patient’s ward notes, not just in the SOTOF record form. However, a copy of the record form ideally would be in the patient’s ward notes to allow the MDT to have access to this document. It is also important not to increase the workload and time for the occupational therapist to complete, score and document the SOTOF as this could impact on the uptake of the use of the test. The 2nd edition SOTOF record form has a checklist which highlights all the skills the patient has intact and areas of deficit and is located at the end of the record form. Therefore, there is a clear summary of deficits and strengths in the record form which ideally would be in the patient’s ward notes. The key deficits impacting on the function of the tasks should be reported on the summary section at the front, however, it may be beneficial to make a note on the front page that a full list of cognitive, perceptual, sensory and motor deficits are at the back of the record form for further information on a patients deficits and skills. Another suggestion was some participants felt owing to the specialist terminology used, having the glossary (currently located in the SOTOF test manual) more accessible would be beneficial. It could be attached to the record form; however, this would increase the size of the record form (as the glossary is over 4 pages long), increasing cost for printing. There could be a laminated copy available for the MDT to refer to, however, the location of this would

need to be appropriate for all members of the MDT. Another option could be an electronic document, but this would require access to a computer if an MDT member wanted to quickly check the meaning of a word / phrase, this could be problematic if computer resources are low and it could be time-consuming

4.5.4 Comparison of SOTOF 1st edition clinical utility studies

Part of the 1st edition clinical utility study (Laver 1994) asked similar questions to those in the online survey for this 2nd edition study and those of the Barcroft (2017) study (refer to section 1.2.2). Although only two participants completed the online survey fully in this study and the questions differed slightly, it is useful to compare and contrast results. With the 1st edition study, the majority of therapists found the SOTOF materials easy to: obtain (72.7%); carry (86.4%); clean (90.9%); store (88.6%) and appropriate for their client (86.4%). Barcroft's (2017) study found five out of the seven (71.4%) participants felt the test would be useful for older adults with neurological impairment. With regards to the test manual and forms, over half of the therapists (54.5%) in the 1st edition study indicated that the instructions were 'fairly easy' to understand and to follow. A similar percentage (52.3%) also indicated that the protocols were 'fairly easy' to follow, and half of the therapists found the SOTOF forms easy to complete. In the Barcroft (2017) study, four out of the seven participants stated the instructions were 'easy' to follow. In this current 2nd edition study, participants stated it was 'very easy' and 'easy' to access the SOTOF and both participants stated it was 'easy' to understand the findings of the assessment. In Barcroft's (2017) study, four out of the seven participants found the GMP easy to follow and five found the application of the GMP useful, with two participants not responding to that particular question. Three out of the seven found the record forms easy to complete, five participants felt the SOTOF helped to inform intervention planning and four found the SOTOF useful to inform clinical reasoning and decision making, with one participant stating it was 'fair' and two not responding. This indicates the addition of the GMP has enhanced the clinical utility of the SOTOF.

Booth et al's. (2018) face validity and clinical utility study involved four final (3rd) year occupational therapy students who administered SOTOF (2nd edition) to a sample of frail older people accessing services from local charities. The Booth et al. (2018) study was a closer replication to the Laver (1994) study, although the 2018 study

obtained the opinions of final year occupational therapy students rather than qualified occupational therapists. Overall Booth et al's. findings were positive; the study highlighted the need for further training and suggested training videos and demonstration of administration of SOTOF. This also may be due to the fact the study was done with students, rather than qualified and experienced occupational therapists. The study concluded that the students felt the SOTOF 2nd edition was useful for informing clinical reasoning, intervention planning and goal setting. The majority of the students reported the scoring as being straightforward and the assessment was presented in a logical order and easy to read. They found the instruction element straightforward and easy to follow. Some highlighted that the SOTOF felt overwhelming and lengthy at first, but reported it did not take as long as expected to when administering. All the studies (1994 study, 2017 study, 2018 study and current study) showed over 50% of participants found the SOTOF easy to access and reported the instructions were easy to follow and it was easy to understand the SOTOF's test results.

4.6 Additional discussion

This section of the chapter will discuss significant findings that were not directly linked to the study's objectives but are considered important to discuss with regards to informing future clinical practice and research. The importance of embedding a test into practice to enhance its usability and the professional's awareness of how patients may retain information now will be discussed.

4.6.1 The importance of embedding a test into practice and increasing usability

Prior to this research study being undertaken, occupational therapists on the wards had received a training session on the SOTOF (2nd edition) and they had the opportunity to shadow the researcher undertaking the assessment in practice. SOTOF previously had not been used and many therapists had not heard of the test. Therefore, alongside the research aims, this study aimed to add another standardised occupational therapy assessment to their 'toolkit' and embed SOTOF into regular clinical practice. However, the uptake of occupational therapists using this test in regular clinical practice was limited. This resulted in smaller sample sizes

than planned for both the patient interviews and for the clinician response to the online survey. In addition, the researcher was the assessor for nine out of the ten SOTOF assessments with patient participants. The researcher, therefore, felt embedding a tool into practice to enhance usability was a key issue. On reflection the researcher could have taken more time with planning how to embed the tool into practice using a specific tool, for example the Plan-Do-Study-Act (PDSA) process (Berwick 1998). This is a key learning point to reiterate to health professionals how timely and difficult it can be to introduce a new assessment into standard practice.. The PDSA model may have been beneficial to guide and support the embedding process. The PDSA model has been widely used within healthcare for making service improvements and changes (Berwick 1998). The PDSA cycle starts with making a plan after recognising a need for improvement or change, deciding who should be involved, what should be measured (plan), then carrying out the change, collecting data (do), observing and learning from the results (study) and implementing the change or starting the process again (act) (Langley et al. 1996). Buhr and White (2006) concluded that the PDSA model was more successful when several small cycles were implemented to allow the team to make changes earlier in the process and to avoid getting preoccupied by lots of details (Dodds et al. 2006). Strong leadership support, commitment to quality improvement, involvement, empowering teams and permitted voicing of concerns throughout the process were identified as key elements to making changes (Guinane and Davis 2004; Willeumier 2004; Jimmerson, Weber and Sobek 2005). Some identified barriers include staff hesitance owing to previous attempts to create change (Erdek and Pronovost 2004), ineffective communication, not sharing information with stakeholders and staff (Docimo et al. 2000; Weir 2005), lack of time and resources (Mills et al. 2005) and insufficient emphasis of the importance and unclear expectations (Leape et al. 2006). Gowdy and Godfrey (2003) and Mutter (2003) recognised the organisational approach to change culture to embrace change.

4.6.2 Professional's awareness of how patients absorb information at this stage of their recovery

This current study was designed so that participants were interviewed about SOTOF on the same day they did the assessment if possible and otherwise within 24 hours

to reduce the effect of cognitive impairment impacting on the patient's recollection of engaging with the SOTOF. One of the questions patient participants were asked during the interview was if they had been involved in any other assessments on the ward. Six participants stated they had not been involved in any other assessment, and three participants could recall rehabilitation programmes (upper limb exercises, visual re-training exercises) but not any assessments. Only one patient recognised a home visit as an assessment, but recalled no other assessments. However, all the patients who participated in the study had undertaken several forms of assessment, including standardised or functional observation assessments, during their inpatient stay prior to undertaking the SOTOF. The researcher recognised that some tests / assessments patients engaged with during their inpatient stay may not have been recognised by the patient as a 'test' or 'assessment', and considered that patients may only digest certain elements of an assessment that resonate with them more. For instance, if their main concern or focus was on their physical deficits it may be that they recognise when their therapist is assessing their physical abilities more than when they are assessing their cognition. Green (1996) and Chew (1986) found patients had limited recollections of their stay in inpatient units. However, Puntillo (1990) found that only one of 24 patients had no recollection of their inpatient stay. If cognition is impaired (particularly memory, attention and processing deficits) then patients are unlikely to take on and use information provided to them (Nys et al. 2007; Lesniak et al. 2008). Hackett et al. (2008) stated that depression occurs in almost one-third of stroke survivors and highlighted the impact of a patient's mood on their memory. A survey in the UK in 2005 reported that only 55% of participants understood the information they were given in hospital about the stroke they had had (Healthcare Commission 2006). There is evidence that suggests information provision after stroke can improve patient and carer knowledge, patients' mood and satisfaction, however, the best form or time to provide this information is still unclear (Forster et al. 2012). Canadian Stroke Network (2006), RCP guidelines (2008) and National Stroke Foundation Australia (2010) all reiterate the importance of information provision being appropriate, accurate and timely and this being a key component of stroke services. In McKevitt et al's. (2011) study, they found that over half of the participants felt they did not receive enough information about their stroke. Although dated, Lomer and McLellan's (1987) study highlighted an important element of information provision. Of those patients who purely received information

verbally, only 7% recalled the information. Of those patients who received a leaflet, 65% recalled the information; however, the leaflet did not make a difference to their level of knowledge regarding their specific stroke deficits. This shows the significant importance to provide information in an individualised form. Information provided to patients needs to be individualised, in view of their stroke-specific impairment and personal situation (DoH 2007; RCP 2008; Eames 2011). Smith, Forster and Young (2004) found that engaging in an education programme did not improve patients' knowledge about stroke but there was a reduction in patient anxiety. Forster et al. (2013) concluded that the immediate period after a person has had a stroke whilst an inpatient may not be the ideal time to provide an education intervention programme, they anticipated it may be more relevant if delivered by community-based teams once the patient has been discharged from hospital. Lowe, Shama and Leathley (2007) completed a feasibility study exploring individualised information booklets compared to the usual stroke information leaflets. The group that received the individualised information had significantly better knowledge of stroke and recognition of risk factors, there was, however, no differences with regards to satisfaction. Another study evaluated an individualised stroke record, only 18 of the 28 participants recalled receiving the record and only one participant had used it to manage their care (O'Connell et al. 2009). This study also highlighted that many patients who had a stroke did not remember much information they were given in hospital, emphasising the need and importance of GP, community therapists / nurses to provide the educational information. This applies to other speciality areas, such as in cystic fibrosis in White et al's. (2016) study; the researchers introduced patients having access to their hospital records from a mobile phone app, although patients' satisfaction was high, this intervention did not improve engagement and adherence, thus, highlighting a key point that knowledge does not necessarily improve adherence.

4.7 Chapter summary

This chapter has discussed and interpreted the findings from this study. The results provided some important knowledge regarding the patients' perspectives and experiences of engaging with SOTOF and useful information regarding how assessment results are shared amongst MDT members. This chapter has discussed the impact the assessor may have on patients' SOTOF assessment experience, the

importance of getting the ‘just-right’ challenge when selecting assessment tools, and the SOTOF assessment process also being an opportunity for patients to learn about their abilities / disabilities, all contributing to the face validity of SOTOF 2nd edition. It has also discussed how verbal communication within the MDT is relied upon, the usefulness to clinicians of having a score attached to assessment tools and the barriers to implementing a new assessment in clinical practice. Finally, this chapter has compared the face and content validity and clinical utility studies from the 1st edition of SOTOF to the findings from this study and Booth et al’s. (2018) study. It is suggested that the use of the GMP in the SOTOF can assist with the development of positive therapeutic relationships, indicating good face validity. It was hypothesised that the inclusion of the GMP and formalised dynamic assessment process in the SOTOF 2nd edition would enhance a patient’s experience of completing the test and they would find the test more motivating and encouraging. The results indicate that the changes made to the 2nd edition have improved patient’s experience of undertaking the SOTOF. The majority of patients were able to correctly identify some purposes of the test. There were significantly more positive descriptors agreed with than negative descriptors, indicating good face validity from patients’ perspectives. The information and content generated from the tool was indicated as useful for other members of the MDT. The GMP has shown to provide useful information that an MDT may benefit from, therefore, indicating potential for wider clinical utility. The next chapter will conclude this thesis, present the strengths and limitations of the study and highlight the implications for both clinical practice and research.

Chapter 5 Conclusion

5.1 Introduction

This chapter will consider the study's strengths and limitations. Conclusions and recommendations from the study's findings will be presented along with a discussion of their implications for both clinical practice and research.

5.2 Strengths

This study is a completed mixed-methods study which involved three types of data collection from two samples (patients and staff) and has brought the results together to evaluate the face validity and explore aspects of the clinical utility of the SOTOF 2nd edition. The study has provided recommendations to enhance the use of SOTOF and ultimately benefit patient care. The researcher completed a reflection (see appendix 7) throughout the data collection period and before data analysis, to increase objectivity throughout the analysis, to improve the validity of the study and reduce the risk of unconscious bias and motivations. The researcher's co-supervisor completed an independent verification of the data analysis to increase trustworthiness. Member checking was used with the MDT participants to demonstrate the initial themes and provide participants with the opportunity to provide feedback. Using both the focus group and the online survey aimed to introduce triangulation. The researcher ensured the patient participant interviews were done by a different person to the one who administered the SOTOF to support patients feel they could be honest about their experiences and provide negative feedback. The research assistant received training with the researcher's supervisor prior to undertaking the interviews to develop his interviewing skills and ensure he undertook the semi-structured interviews in a consistent way.

5.3 Limitations

The study's limitations include the sample sizes for both patients and the MDT samples being relatively small which could impact on the transferability of the results. On reflection, the inclusion criteria for patient participants is considered a limitation; because the study design required patients to have mental capacity to provide informed consent to participate this restricted many patients taking part who may

have benefited from the SOTOF assessment. This meant many of the patient sample reported finding the SOTOF easy and the researcher only gained the views of a sample group who are less likely to undertake SOTOF in practice. If the researcher was to undertake this study again, they would change the inclusion criteria to include patients with or without mental capacity. It is recognised that people with neurological conditions who lack the mental capacity to decide whether to participate and to provided informed consent are being under-researched. The patients were required to recall undertaking the SOTOF and be able to communicate their feelings and experiences about the SOTOF. Therefore, patients who were unable to engage in the interview due to language / speech deficits also were excluded from this study. On reflection, an observational approach could have been used to observe how patients respond to engaging in the assessment or an email, online survey or written interview could have been used; however, emails and online surveys would be difficult for in-patients to access unless they had their own laptop or device in the hospital with them. A written interview might be a pen and paper questionnaire with support to complete it if needed. Egan et al. (2006) found that email interviews were favoured over face-to-face interviews as it allowed participants time to think and take more time to respond to questions, they found particularly those with cognitive impairment felt more comfortable in writing down answers rather than providing verbal on-the-spot answers. Although the study was open to patients with any neurological deficits, all the participants involved had a stroke. Therefore, this face validity study was limited to the perceptions of people with a stroke diagnosis. Also, all the patients were from one stroke unit, therefore, potentially limiting the transferability of the findings. Rating scales were used for part of the patient participants' interview, the limitation with this approach is that rating scales may be subjective, people may interpret and use scales differently and, therefore, someone with the same opinion may rate differently on the scale. The researcher did not do participant checking on the patient interviews, this is a limitation as it could be viewed that the analysis was not a true reflection of interview conversations (Birt et al. 2016). However, as participants had been discharged from the unit prior to data analysis and owing to the cognitive impairments, particularly with some people's memory, this would not have been suitable.

A limitation of the online survey was the small sample size; only two participants fully completed the online survey. The MDT aspect of this study highlighted that the SOTOF had not been embedded into the service as much as planned; therefore the findings from the MDT focus group provided more general results about assessments rather than feedback specific to SOTOF. If this study was undertaken again, it would be useful to have access to a copy of participants' SOTOF test result forms at the analysis stage to be able to compare and contrast with the feedback they gave during the interview. For instance, if they commented the test was 'easy', it would be useful to consider this experience in light of the amount of mediation provided and their SOTOF scores.

5.4 Conclusions

The findings from this study have shown that engaging in the SOTOF can be both supportive for patients and their SOTOF results useful for health professionals. This section will consider each objective and draw conclusions. The first two objectives related to face validity, the third to content validity and the final two objectives related to clinical utility.

5.4.1 Objective 1: To explore the experiences of people with neurological diagnoses (e.g. stroke, head injury, Parkinson's Disease, multiple sclerosis) undertaking the SOTOF 2nd edition – face validity

A positive therapeutic relationship is vital to promote functional improvements and patient satisfaction. This emphasises the importance of therapists' self-awareness and ability to build positive therapeutic relationships when assessing patients. Findings from both sample groups (patients and MDT members), indicated that selecting the correct assessment tool and the correct level of difficulty is crucial to promote patients' engagement, intrinsic motivation and for health professionals to obtain useful assessment results to inform intervention. It became apparent that patient participants who matched the inclusion criteria were not necessarily those patients that would benefit most from the SOTOF. Therefore, whilst many in this study found the SOTOF too easy it might provide an appropriate level of challenge for people with greater impairments. MDT participants highlighted the test would be best for 'the lower level patients'. Therefore, therapists must use their clinical

reasoning to match the assessment tool to the individual to enable both parties to get the most from an assessment and have a positive experience. The SOTOF GMP appears to have increased the opportunity to build therapeutic relationships during the assessment process. The majority of patients agreed with the positive word descriptors and disagreed with the negative word descriptors, indicating an overall positive experience of undertaking the SOTOF. The SOTOF's dynamic assessment element and structured mediation appears to have good face validity.

5.4.2 Objective 2: To explore the perceptions of people with neurological diagnoses (e.g. stroke, head injury, Parkinson's Disease, multiple sclerosis) on the purpose of SOTOF 2nd edition – face validity

The majority of patients were able to identify the purpose of the SOTOF, six out of the ten patients referred to the purpose being to understand how capable they were to complete everyday tasks, suggesting good face validity. Although, patients did not specifically mention the purpose of the test to be the opportunity to increase their awareness of their skills and deficits, 60% felt they gained further understanding of their abilities or impairments through completion of the test. Therefore, SOTOF provided an opportunity for patients to increase their awareness of their abilities and / or disabilities and 80% of patients reported they found the test useful. This supports the face validity of the SOTOF (2nd edition) as the patients potentially can find the test meaningful and useful to inform their understanding of their abilities / disabilities.

These first two objectives aimed to establish face validity for the SOTOF (2nd edition). This study has contributed to the evidence base for the 2nd edition of SOTOF, establishing good face validity. This study has also added to existing literature on patients' experience of engaging in assessments by demonstrating the importance of building a positive therapeutic relationship, the value of selecting the most appropriate test and 'just-right challenge' for a patient and the negative impact undertaking the wrong test could have. The study has also added to existing literature insight about an assessment being an opportunity for a patient to gain insight and understanding into their skills and deficits, that the assessment process is beneficial to the understanding of both the patient and therapist.

5.4.3 Objective 3: To explore the perceptions of the staff working in a stroke rehabilitation multi-disciplinary team on the content of SOTOF – content validity

The data collated for the MDT's perceptions on the content of the SOTOF was limited due to poor uptake of the use of the tool in daily practice and few professionals had seen the tool or even knew about the tool. However, participants in the focus group reported they thought it would be useful for their practice and could see potential benefit to support their intervention planning and goal setting. Overall the findings did not enable conclusions to be drawn regarding SOTOF's content validity from an MDT's perspective.

5.4.4 Objective 4: To explore if staff working in the stroke MDT consider the SOTOF scoring form and summary of results useful for their practice. Objective 5: To explore if the staff of the stroke MDT consider the SOTOF useful for informing goal setting in rehabilitation and treatment plans –clinical utility

During the development of SOTOF (2nd edition) a scoring element was added. Health professionals reported having a score attached to an assessment tool as being beneficial to share knowledge particularly across professions. Although there is a place for occupational therapists to use observational functional assessments, this study has highlighted the benefit of using a standardised assessment with a score to be able to communicate the results easier with other professionals. Verbal communication was found to be highly relied upon by health professionals to share knowledge and information about assessments. MDT meetings are an opportunity for this communication to take place; however, this study has highlighted that health professionals relied on ad-hoc verbal communication to feedback information on assessments, such as SOTOF, and assist with their approaches to care and therapy. Therapists document assessment findings in patients' notes, however, other MDT members appeared to rarely read these notes and relied on verbal handovers of information. Owing to the fast pace of the ward environment it is anticipated that this verbal handover does not always happen and, therefore, there is an opportunity to increase this communication and ultimately enhance individualised patient care.

The final two objectives aimed to establish the clinical utility of the SOTOF (2nd edition). Both online survey participants found the SOTOF easy to access and found the findings easy to understand. However, because therapists did not explicitly state findings were obtained using SOTOF during verbal handovers conclusions about SOTOF's clinical utility from MDT participants' perspectives cannot be made. The findings indicated that the insertion of the GMP into the SOTOF (2nd edition), scoring and the identification of strategies and recommendations from the occupational therapists have potential to benefit other members of the MDT and, ultimately, the patient. It has been concluded that the content and information the SOTOF (2nd edition) generates may be relevant to other members of the MDT, not only occupational therapists. However, further research is required.

5.5 Implications for practice

This study aimed to investigate the face and content validity and clinical utility of the SOTOF (2nd edition). There have been several key points that have been identified throughout the study as being useful to inform future practice.

This study has recognised the benefit and limitations of occupational therapists using observational assessment and non-ADL based assessments, however, has reiterated the importance of using occupation-based standardised assessments to meet guidelines and to maintain an occupational therapist's professional identity. As much focus and clinical reasoning that is put into treatment programmes also should be put into assessing patients and choosing the correct tool with appropriate level of challenge for the assessment. This study has indicated the SOTOF is an appropriate assessment for people with stroke which can provide a positive experience, support the development of a therapeutic relationship, and generate information useful for MDT members. Patients can use the experience of undertaking SOTOF to understand and build insight into their own strengths and deficits. Findings indicated the need for an MDT to share knowledge and expertise to work towards a common goal to benefit patients' results and experiences. Once a therapist has completed an assessment, it is vital this information and their recommendations are shared with other members of the MDT verbally (as well as being documented in patients' notes) to benefit the patients' care and therapy.

5.5.1 Providing information / education to patients

The findings from this study have highlighted that patients may not recall as much of their inpatient stay as health professionals realise and this is important, particularly when transferring to the community from an inpatient setting. The findings from this study have emphasised the importance of providing individualised education plans for patients and their families to enhance self-management and motivation for therapy. Health professionals need to be aware of how their patients take on information and their preferred learning approaches so as to not overload them. Patients need the right information, at the right level and at the right time. Information needs to be conveyed in the best way for an individual patient and their family, particularly to enhance their self-management skills. The discussion provided in section 4.6.2 considered different approaches to delivering educational information, and found the evidence is quite conflicting with regards to the timing and format of information. This could simply be because every individual is different, has different deficits and strengths and different learning styles. Therefore, each patient will require a tailored approach to education depending on these factors and the information needs to be specific to the needs and requirements of each individual.

5.5.2 Implementing change and embedding an assessment into practice

The process of undertaking this study has found barriers to implementing change and embedding an assessment into practice. This impacted on the MDT participants' data collection. During the study there was reluctance from occupational therapy colleagues to try using a new tool in clinical practice, even after providing several training sessions. On reflection more time could have been taken with planning how to embed the tool into practice using a specific change management tool. This is a key learning point from the study; when health professionals are introducing an assessment into standard practice it could be useful to use a model such as the Plan-Do-Study-Act (PDSA) (Berwick 1998) process. Support for this study was obtained from the occupational therapist clinical lead, but wider strong support from managers and leaders could have helped to ensure those involved were fully involved in the entire process. Clinicians need to feel safe to voice their concerns

during changes. Plenty of time should be planned for this process to allow opportunity for changes and improvements.

5.6 Considerations for future research

For further research, it would be useful to complete the study on a larger scale with multi –centres and involving more diverse neurological diagnoses to further establish face and content validity and clinical utility. It would also be useful in future studies to compare the results of the test with the participant's feedback to investigate any links. For instance, if a person scored low on SOTOF, was their feedback more negative. Recent studies are building the evidence base for the SOTOF (2nd edition), however, further studies would be useful, for example test-retest and inter-rater reliability studies.

In addition to research specific to SOTOF, further research is required regarding education for patients, specifically within the speciality of stroke and neurology, given the finding that the current evidence is conflicting about when to provide information / education and in what format. The literature discussed regarding providing education has shown patients' benefit from an individualised approach, however, in clinical practice this may be difficult to employ. There are several other themes that were derived from this study that would benefit from further research, for example, how assessment scores are used amongst an MDT, how MDT members communicate their expertise to enhance the patients' care and how this can be improved.

5.7 Recommendations

1. To enhance the content and face validity and clinical utility for SOTOF 2nd edition, it would be beneficial to make an addition to the SOTOF manual providing advice on how to explain the test to patients.

2. It would be useful to add a reminder in the SOTOF manual to encourage therapists to feedback and discuss the results of the test with the patient to support their therapeutic relationship and further enhance face validity.

3. On the front of the SOTOF record form, there is a summary box, it might be helpful to add the word 'recommendations' to provide a prompt for the occupational

therapist to provide recommendations which would benefit other members of the MDT, enhancing the content validity and clinical utility of the SOTOF further.

4 It may also be beneficial to make a note on the SOTOF record form front page that a full list of cognitive, perceptual, sensory and motor deficits are at the back of the record form for further information on a patients deficits and skills. This would potentially allow other MDT members to locate this information more quickly, and enhance SOTOF's clinical utility.

5. Therapists need to have good self-awareness skills and the ability to build therapeutic relationships to benefit patient outcomes. Not only should therapists understand the 'just-right' challenge with regards to rehabilitation / intervention programmes but also with assessments to allow themselves and patients to gain optimum usefulness from the process. Therapists need to remember the assessment process is also an opportunity for patients to recognise their skills and deficits and to build their insight and knowledge, highlighting the benefit of dynamic assessments. Dynamic assessments allow the therapist to recognise what level of support is required to allow a patient to complete a task fully and they also allow patient's the opportunity to focus on what they can / cannot do and what support they needed to complete the task.

6. Therapists need to be aware of, and recognise, how their patient's best receive information and how their deficits impact on this, in order to be able to provide individualised educational programmes. Patients' with neurological conditions may have cognitive deficits that impact on their ability to attend to information, process and store information. It is well known that patients are more satisfied (McKevitt et al. 2011; Forster et al. 2012; White et al. 2016) when provided with educational material but there is limited evidence showing the materials that have been trialled have improved patients' knowledge of their own deficits / self-management skills.

7. It is recommended that members of the MDT share their knowledge and communicate with one another to benefit the patient. This study has acknowledged that verbal communication is heavily relied upon, but this can be ad-hoc, potentially limiting the benefit for patients. Using scores to communicate test results is useful to help other professionals understand the results; however, this study has highlighted the need for this to be supported by specific recommendations for other

professionals to benefit from. For example, an occupational therapist completing the SOTOF is able to provide the MDT with a score indicating how independent a patient is with each of the four ADL tasks. The MDT recognised this was useful but they would benefit from further information about what the SOTOF scores actually mean. For instance, if the occupational therapist finds the patient best responds to visual cues rather than verbal cues, this should be documented alongside the score and verbally communicated to assist other professionals to provide a more individualised approach to therapy and care.

The SOTOF (2nd edition) provides occupational therapists with a standardised, dynamic ADL assessment tool to use with people with neurological diagnoses. There are other standardised ADL assessments, for instance; the AMPS and FIM+FAM. The AMPS, however, does not provide a summary of intact skills, it does not allow for graduated mediation to enable completion of task and to enable the assessor to identify what level of mediation was required to enable task completion. It is hypothesised that patients who are able to be supported to complete a task will get a more positive experience out of completing a test. The AMPS does provide more variety of tasks available to choose from and they are placed in order from easiest to hardest tasks. This would be beneficial when thinking about the just-right challenge, as discussed earlier in the discussion, this is important with regards to patient experience. The FIM + FAM breaks down the neurological impairments similarly to the SOTOF. However, the SOTOF then provides suggestions for further specific assessments which may be required, which is most likely to benefit junior staff or less experienced within the speciality. FIM + FAM has scoring for mood and behaviour, pain and fatigue, not addressed by SOTOF. The seven-point scoring system allows different levels of mediation, like SOTOF. The SOTOF GMP does not score a patient down for the length of time it takes a patient to complete a task, whereas, in the FIM+FAM they would score on level six if they took longer than a ‘reasonable time’. However, a reasonable time could be subjective to the individual assessor. Overall, the SOTOF 2nd edition has an increasing evidence base and this study has demonstrated the potential for it to support positive therapeutic relationships and enhance patient care.

5.8 Chapter summary

This study has contributed to the evidence base for the 2nd edition of SOTOF, establishing good face validity and potential for wider clinical utility amongst an MDT. Patients had overall more positive than negative comments to make regarding their feelings about engaging with the SOTOF assessment, suggesting an overall positive experience. The majority of patient participants were able to recognise the purpose of the test. The findings indicate that the insertion of the GMP into the SOTOF (2nd edition), scoring and the identification of strategies and recommendations from the occupational therapists could benefit other members of the MDT and, through informing their interventions, ultimately benefit patients. It has been concluded that the content and information the SOTOF (2nd edition) generates has the ability to influence positively on other members of the MDT's clinical practice, not only occupational therapists.

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Appendices

Appendix 1: The graduated mediation protocol

SOTOF Graduated mediation protocol		
0	**Independent**	The person is independent completing the task. No prompting or assistance is required from the clinician.
1	**General verbal cue**	This could be a statement (Katz et al., 2011) e.g. 'take your time' or could be a general question e.g. 'what do you think is the next step?' or 'what else might you need to complete this task?' (Baum and Wolf, 2013 p.3). This is not an action or telling the person what to do.
2	**Gestural Cue**	This could be miming the action that is required to complete the particular task or a movement that may guide the participant. This may include pointing to where they might find an item or pointing to equipment they may need to complete the task (Baum and Wolf, 2013).
3	**Specific feedback (verbal cue or prompt)**	This can be a verbal cue, in the form of feedback (Katz et al., 2011) such as 'there is a mistake, can you try and correct it' or a specific verbal prompt command such as 'pick up the cup' (Baum and Wolf, 2013 p.3).
4	**Physical assistance** and / or **Co-active assistance** and / or **Modifications** and / or **Demonstration**	**Physical assistance:** This clinician physically supports the person to complete an action, e.g. hold the shirt whilst the person puts his / her first arm in the sleeve (Baum and Wolf, 2013). **Co-active assistance:** The clinician physically guides the movement but allowing the person to lead and withdraws the physical assistance if the person takes over the movement (Sanderson and Gitsham, 1991). **Modifications:** The clinician reduces the amount of stimuli or modifies the environment to reduce the task demand (e.g. changing the physical environment; Katz et al., 2011). **Demonstration:** The clinician may also do the action using task items in order for the person to copy (Katz et al., 2011). The person should still be attending to the task (Baum and Wolf, 2013).
5	**Do for the person**	The person is unable to complete the task so the clinician completes the task, or the part of the task, for the person.

Appendix 2: Example of one page of the record form

Structured Observational Test of Function (SOTOF) 2nd edition

Record Form Task 1: Eating

Key: (EL) items can be administered to clients with expressive language

(ED) items provide alternative assessment methods for clients with expressive dysphasia

Tester's name:	**Date:**
Dominant hand: Right ☐ Left ☐	**Hand used for spoon**: ☐ Right ☐ Left

	Item	Able	Unable	Level of mediation required	Hypotheses, further assessments required, comments
1	(EL) Identifies spoon through touch.	☐ Right ☐ Left	☐ Right ☐ Left	0. Independent ☐ 1. General prompt ☐ 2. Gestural cue ☐ 3. Specific feedback/cue ☐ 4. Physical assistance ☐ 5. Do for client ☐	
2	Scans table for objects.			0. Independent ☐ 1. General prompt ☐ 2. Gestural cue ☐ 3. Specific feedback/cue ☐ 4. Physical assistance ☐ 5. Do for client ☐	

2	Fixes gaze on objects.			0. Independent ☐ 1. General prompt ☐ 2. Gestural cue ☐ 3. Specific feedback/cue ☐ 4. Physical assistance ☐ 5. Do for client ☐	
2	Recognises objects by (EL) naming or (ED) pointing.			0. Independent ☐ 1. General prompt ☐ 2. Gestural cue ☐ 3. Specific feedback/cue ☐ 4. Physical assistance ☐ 5. Do for client ☐	
3	Put spoon on table on right of bowl			0. Independent ☐ 1. General prompt ☐ 2. Gestural cue ☐ 3. Specific feedback/cue ☐ 4. Physical assistance ☐ 5. Do for client ☐	

Appendix 3: Patient semi structured interview questionnaire

Face and content validity of the Structured Observational Test of Function (SOTOF) from the perspective of patients with a neurological diagnosis and a stroke rehabilitation multi-disciplinary team.

Patients' questionnaire for semi-structured interview

Participant number: _____

Interviewer's name: _____

Date interview conducted: _____

Audio-recording file name: _____

Questions

Thank you for completing the assessment with your occupational therapist. We are going to ask you a few questions about what you thought about the assessment and how you found doing it"

If needed, describe the SOTOF assessment to help the person remember which assessment you are talking about: the assessment had an eating task, pouring a drink, washing your hands and putting on an item of clothing.

If needed remind the person about the consent process and show him / her a copy of their signed consent form.

“Are you still happy to take part in the interview?”

1. What did you think of the assessment?

2. How did you feel when you were doing the assessment?

3. When the therapist was giving instructions, how did you find following these instructions? Prompt: were you able to follow them easily? Were they difficult to follow?

4. What do you think the purpose of the assessment is? Prompt: did you know what your occupational therapist was assessing / trying to find out during the test?

5. Have you recently been involved in any other assessments whilst you have been staying on the ward? If, yes, how did this assessment compare to the other one(s)?

6. Were the four tasks familiar activities to you? Prompt: the assessment had an eating task, pouring a drink, washing your hands and putting on an item of clothing. What other everyday tasks would be important to you whilst in hospital?

7. I am now going to give you some words which might describe how a person might experience doing the assessment. Please let me whether you strongly agree, agree, are neutral, disagree or strongly disagree with the statements.

   Circle the person’s responses:

· I found doing the assessment…Boring

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Easy

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Useful

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Upsetting

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Relaxing

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Difficult

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Interesting

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Stressful

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Irrelevant

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Enjoyable

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Tiring

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Encouraging

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Distressing

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Straightforward

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Complicated

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Motivating

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Confusing

Strongly agree Agree Neutral Disagree Strongly disagree

· I found doing the assessment …Simple

Strongly agree Agree Neutral Disagree Strongly disagree

8. What do you think about the time it took to complete the assessment? Prompt: how long do you think it took? Did you think it was long? quick? Do you think it took longer than you would have liked an assessment to take?

9. Were you offered any breaks between the assessment activities, e.g. between the eating and the pouring a drink tasks? Did you feel you needed a break during the assessment?

10. Is there anything you didn't like about the assessment? Prompt: did you dislike any parts/elements of each task and/ or what the occupational therapist asked you to do?

11. Do you have any additional comments about the assessment and / or your experience of doing the assessment that you would like to add?

Thank you we are very grateful to you for participating in this study.

Notes:

Administered and filled in by……..

Signature…….. Date…….....

Appendix 4: 5-point scale in larger font for patient participants

Strongly agree Agree Neutral Disagree Strongly disagree

Appendix 5: MDT semi-structured focus group schedule

Introduction

This focus group is to establish the impact of the results of the SOTOF on other professions' practice. SOTOF is the Structured Observational Test of Function administered by occupational therapists; this is the 2nd edition which was updated in 2016. The SOTOF was designed to assist occupational therapists in identifying perceptual, cognitive, motor and sensory deficits which impact on the function of people with stroke undertaking personal activities of daily living. The dynamic assessment element allows the therapist to identify the most useful prompts / cues to facilitate the person's functional ability. It is hoped that the information gained will help increase the underlying evidence base of the assessment and inform the practice of the multi-disciplinary team in a neurological setting.

This focus group will be audiotaped and the information you provide will be transcribed and shared with the researchers and research supervisor. The data collected will inform developments to the assessment tool to improve the impact the assessment results have on the patients' overall care from all professions.

To remind you, if you choose to withdraw from the study, you can do so at any point. If you are sharing any particular patient examples please do not use the patient's name.

Are you happy to proceed? Introduce name, role and letter.

Were you aware of the SOTOF prior to this study?

Have you seen the SOTOF assessment report form in any patients' notes?

How easy was it to access the record form?

How easy was it to understand the findings of the assessment?

Are the results applicable to inform your practice within your particular profession? – If yes, in what way? If not, why not? What might be more useful?

Have the results supported your approach to interventions? – If yes, how? If not, why not? Were there any barriers to implementing the assessment results and recommendations?

Have the results informed your practice in any way in general or with specific patients? If yes, in what way? Have you got specific examples? If no, why do you think that is?

What information would you like in the summary of the record form or in the patients' continuation notes?

Appendix 6: MDT online survey and invite email

Recruitment email:

Face and content validity of the Structured Observational Test of Function (SOTOF) from the perspective of patients with a neurological diagnosis and a stroke rehabilitation multi-disciplinary team.

We are a research team of staff from York Teaching Hospitals NHS Foundation Trust and the School of Health Sciences at York St. John University. This includes at the hospital: Eden Marrison an Occupational Therapist (lead researcher) and Alex Porter (Research Assistant). Our research is supervised by Dr. Alison Laver-Fawcett, Associate Professor at the School of Health and Sciences at York St. John University (Contact a.laverfawcett@yorksj.ac.uk; 01904-876419).

We would like to request your participation in this research project aimed at evaluating the face validity and clinical usefulness of an occupational therapy assessment called the Structured Observational Test of Function (SOTOF) (2nd edition). The SOTOF was designed to assist occupational therapists in identifying perceptual, cognitive, motor and sensory deficits which impact on the function of people with stroke undertaking personal activities of daily living. The dynamic assessment element allows the therapist to identify the most useful prompts / cues to facilitate the person's functional ability. It is hoped that the information gained will help increase the underlying evidence base of the assessment and inform the practice of the multi-disciplinary team in an acute neurological setting. We consider the risks to be minimal. This project has been approved by Yorkshire & The Humber – Bradford Leeds Research Ethics Committee, HRA and Health and Care Research Wales (HCRW) and York St John University Cross School Research Ethics Committee.

In order to take part, you must be part of the multi-disciplinary team working on the stroke service at York Hospital.

If you would like to take part in the study, an online survey has been attached to this email. This consists of 11 questions; both open-ended and closed questions and should take no longer than 20 minutes to complete. All information / feedback you provide will be anonymous.

Thank you for taking your time to read this email and take part in this study.

Online survey:

Question 1: Do you give informed consent to taking part in this online survey regarding SOTOF? Yes No

Question 2: How many years have you been qualified in your current profession?

Less than 1 year

1-4 years

5-9 years

10 years and over

Question 3: Were you aware of the SOTOF prior to this study? Yes No

Question 4: Have you seen the SOTOF assessment report form in any patients' notes? Yes No

Question 5: How easy was it to access the record form?

1. Very easy 2. easy 3. fair 4. Difficulty 5. impossible

Please comment:…….

Question 6: How easy was it to understand the findings of the assessment? Level 1-5?

1. Very easy 2. easy 3. fair 4. Difficult 5. impossible

Please comment: …….

Question 7: Are the results useful to inform your practice within your particular profession? – If yes, in what way? If not, why not? What might be more useful?

1. Very Useful
2. Somewhat useful
3. Not very useful
4. Not at all useful

Question 8: Have the results supported your approach to interventions? – If yes, how? If not, why not? Were there any barriers to implementing the assessment results and recommendations?

Question 9: Do you have any recommendations for any improvements to the SOTOF or what information would you like in the summary of the record form or in the patients' continuation notes?

Please comment:……

Appendix 7: Researcher's reflective document

Researcher's reflection prior to date collection

It was important to reflect on my own thoughts / feelings of the SOTOF prior to analysing the interviews to ensure I did not influence the direction of the themes / results. This is one of the main reasons a research assistant completed the interviews as I am invested in the assessment tool and the fact I had completed the assessment with the patients. As Finlay and Ballinger (2006) discuss, professional background can influence data analysis.

As the researcher, I was the one to discuss the study with potential participants and receive informed consent; I therefore, had to reflect on my communication skills with patients and my ability to recognise if a patient did not want to participate. I felt as it was my study, I was obviously eager to recruit as many participants as I could to ensure I got sufficient data and needed to not let this come across when discussing the study with potential participants. I felt due to my clinical experience with a variety of people of different ages and backgrounds this was sufficient preparation for me to remain open minded and non-judgemental during the recruitment stage with potential participants (Ahern, 1999).

Thoughts of the SOTOF:

It is a standardised ADL assessment, something we currently do not use on the stroke unit, it is in the NICE and RCP guidelines that standardised assessments should be used to assess cognition particularly and that screening tools may mean some deficits are overlooked and missed. I, therefore, feel quite strongly about using a standardised ADL tool as an OT. Our primary role is to assess ADL function, use activity analysis to identify the deficits impacting on occupational performance and treat those deficits with either a restorative or compensatory approach. There are very few standardised ADL assessments, and even less that do not require training or have a cost attached.

As part of my undergraduate degree I developed the graduated mediation protocol which made the second edition and therefore, have given a lot of time and effort into improving, particularly the dynamic element of the assessment tool.

I feel the SOTOF is best for lower level patients, who may have significant cognitive deficits as the tasks are quite basic but allow the OT to assess a large variety of cognitive deficits, also, without relying on expressive speech. I feel for this study, due to the inclusion criteria, many of the patients that would benefit most from the SOTOF were not included in the study (needing to have mental capacity and being able to engage in an interview). Therefore, I anticipated that the data from the interviews would be that the SOTOF was too easy and basic for those who were involved in the study.

The assessment is quite repetitive over the four tasks and asks the patient to do similar things each time (e.g. put the item on the right of another item, or, describe what you use these items for). I feel for the participants in the study this could have been quite boring and these patients were able to do most or all of the tasks independently. However, for those patients who have significant cognitive deficits, these aspects would have been much harder and shown the OT much more. This also would impact on the 2nd part of the study with the MDT. If the patients we are using the SOTOF with are able to do the tasks independently, the OTs have very little to report to the MDT, therefore, the MDT are not hearing much about the SOTOF and what the tool has identified and then what the OT advises other professionals to do. The SOTOF needs to be used with cognitively impaired patients for the results to indicate what the deficits were to then impact on the work of the MDT.

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Appendix 8: Ethical approval letters

Appendix 8a. Approval letter from York St John University

York St John University,
Lord Mayors Walk,
York,
YO31 7EX

1st March, 2018

York St John University Cross School Research Ethics Committee
(Health Sciences, Sport, Psychological and Social Sciences and Business)

Dear Eden,

Title of study: Face and Content validity of the Structured Observational Test of Function (SOTOF) from the perspective of patients with neurological diagnoses and a stroke rehabilitation multi-disciplinary team.
Ethics reference: 130012508_01032018
Date of submission: 30/01/2018

I am pleased to inform you that the above application for ethical review has been reviewed by the Cross School Research Ethics Committee and I can confirm a favourable ethical opinion on the basis of the information provided in the following documents:

Document	Date
Ethics application	30/01/2018
Participant consent form – Patient	27/02/2018
Participant consent form – MDT	27/02/2018
Participant information sheet - Patient	27/02/2018
Participant information sheet – MDT	27/02/2018
Responses to feedback	27/02/2018

This approval is dependent on approval from the NHS R & D review. Once received, please forward the approval from the NHS to the committee.

Please notify the committee if you intend to make any amendments to the original research as submitted at date of this approval, including changes to recruitment methodology or accompanying documentation. All changes must receive ethical approval prior to commencing your study.

Yours sincerely,

Nathalie Noret

Appendix 8b. Approval letter from the Health Research Authority

Ymchwil Iechyd a Gofal Cymru
Health and Care Research Wales

NHS
Health Research Authority

Miss Eden Marrison
York Teaching Hospital NHS Foundation Trust
Wigginton Road
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YO31 8 HE
eden.marrison@york.nhs.uk

Email: hra.approval@nhs.net
Research-permissions@wales.nhs.uk

HRA and Health and Care Research Wales (HCRW) Approval Letter

Study title:	**Face and content validity of the Structured Observational Test of Function (SOTOF) from the perspective of patients with a neurological diagnosis and a stroke rehabilitation multi disciplinary team.**
IRAS project ID:	**238134**
REC reference:	**18/YH/0113**
Sponsor	**York St John University**

I am pleased to confirm that **HRA and Health and Care Research Wales (HCRW) Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

How should I continue to work with participating NHS organisations in England and Wales?

You should now provide a copy of this letter to all participating NHS organisations in England and Wales*, as well as any documentation that has been updated as a result of the assessment.

Appendix 9: Participant information sheets

9a. Patient participant information sheet

An invitation

We would like to invite you to take part in our research project. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Talk to others about the project if you wish.

What is the study about?

This research project is aimed at exploring patients' views and experiences of an occupational therapy assessment called the Structured Observational Test of Function (SOTOF). It is hoped that the information gained will help to improve our understanding of patients' experiences of doing the assessment and if needed, to improve the assessment. It is intended that the assessment will assist occupational therapists in identifying challenges experienced by people with neurological diagnoses in doing every day tasks. The results should help patients and occupational therapists to set goals for and plan treatment. We consider the risks related to taking part in this study to be minimal. This project has been approved by Yorkshire & The Humber – Bradford Leeds Research Ethics Committee, HRA and Health and Care Research Wales (HCRW) and York St John University Cross School Research Ethics Committee.

What will I be asked to do?

For this project we will ask you to:

1. Answer questions about your age, gender, ethnicity, level of education and any health conditions. This will take approximately 5 minutes.
2. Take part in the Structured Observational Test of Function. This will take approximately 50 minutes. The occupational therapist will complete an assessment form during the assessment. The assessment involves a screening assessment and the completion of four activities of daily living tasks;
    - Eating from a bowl with a spoon.
    - Washing hands.

- Pouring a drink from a jug and drinking from a cup.
- Putting on a long-sleeved garment e.g. cardigan, jacket, shirt or blouse.

3. Take part in a short interview. We will ask you some questions about your experience of doing the SOTOF assessment and what you thought about it. The interview will take approximately 30 minutes. The interviewer will make notes of your responses to the questions during the interview. The interview will be audio recorded.

Where will the assessment and interview take place?

The assessment and the interview will take place in the quiet therapy room on the stroke rehabilitation ward at York Hospital. There will be a break between the assessment and interview and these may not be on the same day.

Who can take part in the study?

In order to take part, you must be aged 60 years or over, have a neurological diagnosis (e.g. stroke, head injury, Multiple Sclerosis, Parkinson's Disease) and be able to understand and communicate in English.

What happens to the information I provide?

A copy of the record form from the assessment will be placed in your medical notes to be used to inform your treatment. This will have your name on and will be kept securely in accordance to the York Hospital's usual confidentiality procedure for medical records. The copy of the assessment results in your medical notes may be looked at by other members of the NHS Trust who are working directly with you. The NHS research and development department may require access to your medical notes for audit purposes. The interview will be transcribed and anonymised by either the lead researcher or the research assistant.

All information and opinions you provide for the research will be treated confidentially. Your name will only be held on the signed consent form and a list with your name and a participant number code, which will be kept within the hospital. Research information with your name on will be destroyed at the end of the study and within a maximum of five years. On all other information a number code will be used. This means that all other personal information on research data will be coded,

to allow you to remain anonymous. This anonymised information will be stored at York Hospital and at York St. John University. The anonymous results will be shared among the researchers and the research supervisor. You will not be named in any of the verbal or written work arising from the study. There may be a chance that the data collected will be used in a research article, shared in a conference presentation or included in the test manual for the SOTOF (2nd edition). However, this would not include your name or anything else that may identify who you are or where you are from.

The anonymised results from the test will be used in a future study. The future study will compare the results of participants with neurological conditions to the test results of participants without neurological conditions.

Do I have to take part in the study?

You do not have to take part in this study, the choice is yours. Your participation is completely voluntary. You will be free to choose the level of discussion that you engage in and can withdraw from the study at any point before the assessment, during the assessment or interview, and after your interview provided that withdrawal is not after 30th November 2018. You can withdraw from the study without your medical care, rehabilitation or legal rights being affected in any way. If you want to withdraw from the study please contact:

Eden Marrison, Occupational Therapist on Ward 39.

Telephone number: 01904 726157

Email: eden.marrison@york.nhs.uk.

Do I have to answer all the questions?

You do not have to answer all the questions within the interview. You can say as little or as much as you want. If you do not understand the question you can ask the interviewer to explain it further.

What if I have further questions about the study?

Please feel free to ask any member of the research team (our names are listed at the bottom of this information sheet) any questions you may have about the study to help you decide whether you would like to take part or not.

What happens next if I want to take part in the study?

If you are willing to participate in this research project, please let a member of staff on the ward know. One of the researchers will come and discuss the study with you and answer any questions you may have. You will then be asked to sign a consent form and return it to one of the project researchers. Please keep this information leaflet and the second copy of the consent form you will be given for your own reference.

What if there is a problem?

If you have a concern about any aspects of this project please speak to the research team who will do their best to answer your questions. If you remain unhappy and wish to complain formally, you can do so via the Patient Advice and Liaison Service PatientExperienceTeam@york.nhs.uk Tel: 01904 725317 or via the Hospital R&D department Tel: 01904 726996

Thank you for taking the time to read this information sheet about our study.

Researchers and contact details:

We are a research team of staff from York Teaching Hospitals NHS Foundation Trust and the School of Health Sciences at York St. John University.

This includes at York hospital:

Eden Marrison an Occupational Therapist and lead researcher - eden.marrison@york.nhs.uk

Our research is supervised by Dr. Alison Laver-Fawcett, Associate Professor at the School of Health and Sciences at York St. John University - a.laverfawcett@yorksj.ac.uk 01904-876419.

Alex Porter – Research Assistant

9b. MDT participant information sheet

An invitation

We would like to invite you to take part in our research project. You have been approached because you are a member of the multi-disciplinary team working within the stroke service at York Hospital. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Talk to others about the project if you wish.

What is the study about?

The research project is aimed at evaluating the face validity and clinical usefulness of an occupational therapy assessment called the Structured Observational Test of Function (SOTOF) (2nd edition).

The SOTOF was designed to assist occupational therapists in identifying perceptual, cognitive, motor and sensory deficits which impact on the function of people with neurological diagnoses undertaking personal activities of daily living.

The dynamic assessment element allows the therapist to identify the most useful prompts / cues to facilitate the person's functional ability. It is hoped that the information gained will help increase the underlying evidence base of the assessment and inform the practice of the multi-disciplinary team in an acute neurological setting.

We consider the risks related to taking part in the study to be minimal. This project has been approved by Yorkshire & The Humber – Bradford Leeds Research Ethics Committee, HRA and Health and Care Research Wales (HCRW) and York St John University Cross School Research Ethics Committee.

What will I be asked to do?

For this project we will ask you to:

Take part in a short focus group to discuss the impact of the SOTOF (2nd edition) results on the practice of the multi-disciplinary team (e.g. if it supports other

professions' interventions, if the record form / summary is clear, understandable and useful).

The focus group will be audio recorded on a digital recorder and a typed transcript will be made. The recordings will be transcribed by the research assistant and the lead researcher.

Who can take part in the study?

In order to take part, you must be part of the multi-disciplinary team working on the stroke service at York Hospital.

Where will the focus group take place?

If you meet the criteria we are looking for, we would like to invite you to attend a session lasting approximately 30 minutes. The research will be undertaken in the day room on the stroke rehabilitation ward 39 at York Hospital.

What happens to the information I provide?

All information and opinions you provide will be treated confidentially. Your name will only be held on the signed consent form and on a list of names and participant codes, all of which will be kept in a locked cabinet in the hospital. For all other information, a number code will be used. This means that all personal information will be coded, to allow you to remain anonymous. The anonymous results will be shared among the researchers and the research supervisor. You will not be named in any of the verbal or written work arising from the study.

There may be a chance that the data collected will be used in a research article, shared in a conference presentation or included in the test manual for the SOTOF (2nd edition). However, this would not include your name or anything else that may identify who you are or where you are from.

The audio taped material will be transcribed and the transcript will not have your name on it. This transcript will be used solely for research purposes. The audiotape file will be password protected and stored in a restricted access folder on the York St. John University server. The audio file will be deleted on completion of the study and within a maximum of 5 years.

Do I have to take part in the study?

Your participation is completely voluntary, you will be free to choose the level of discussion that you engage in and can withdraw from the study at any point provided that withdrawal is not after 30th November 2018. If you wish to withdraw please contact:

Eden Marrison on 01904 726157 or eden.marrison@york.nhs.uk.

What happens next if I want to take part in the study?

Please feel free to ask the research team (our names are at the bottom of this information sheet) any questions you may have about the study to help you decide whether or not you would like to take part. If you are willing to participate in this research project, please sign the consent form attached and return it to one of the project researchers. Please keep this information leaflet and the second copy of the consent form for your own reference.

Thank you for taking the time to read this information sheet and consider taking part in the study.

Researchers and contact details:

We are a research team of staff from York Teaching Hospitals NHS Foundation Trust and the School of Health Sciences at York St. John University.

This includes at York hospital:

Eden Marrison an Occupational Therapist and lead researcher - eden.marrison@york.nhs.uk and:

Alex Porter (Research Assistant)

Our research is supervised by Dr. Alison Laver-Fawcett, Associate Professor at the School of Health and Sciences at York St. John University - a.laverfawcett@yorksj.ac.uk 01904-876419.

Appendix 10: Participant consent forms

Patient participants consent form

Title of study:

Face and content validity of the Structured Observational Test of Function (SOTOF) from the perspective of patients with a neurological diagnosis and a stroke rehabilitation multi-disciplinary team.

Please read and complete this form carefully. If you are willing to participate in this study, please sign and date the declaration at the end. If you do not understand anything and would like more information, please ask.

Please initial each box:

1. I confirm that I have read the information sheet dated..... (version 2) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw after the interview without giving any reason, without my medical care, rehabilitation or legal rights being affected. ☐

3. I understand that the research will involve:
   - Answering questions about my age, gender, ethnicity, level of education and any health conditions. This will take about 5 minutes.
   - Participating in an assessment, comprising of a screening tool and four simple everyday tasks. This will be undertaken once. The assessment should take approximately 50 minutes.
   - Taking part in a short interview where the interviewer will make notes of my responses. The interview will take approximately 30 minutes. ☐

- The approximate time in total that I will be asked to take part in this study should be about an hour and a half.

4. I understand that the interview will be audio recorded. ☐

5. I understand that all information about me will be treated in strict confidence and information that can be identified to me will only be discussed within the research group. The names of the researchers are at the bottom of this form. ☐

6. I understand that I will not be named in any written work (e.g. academic article, test manual) or presentation related to this study. ☐

7. I understand that a copy of the record form from the assessment will be placed in my medical notes to be used to inform my rehabilitation interventions. This will have my name on and will be kept securely in accordance to The York Hospital's confidentiality procedure. This may be accessed by the NHS research and development team for audit purposes. ☐

8. I understand that the results of the assessment may be looked at by other members of the NHS Trust who are working directly with me. ☐

9. I understand that the results of the assessment will be used in a future study comparing the results to a sample of participants without neurological conditions. ☐

10. I would like to be informed of the results of the study via either email or post and give my consent for the research team to do so. ☐

I freely give my consent to participate in this research study and have been given a copy of this consent form for my own information.

Signature: _____

Print name: _____

Date: _____

Witnessed by: _____

Audio recording of consent made: Yes [ ] No [ ]

Witnessed by (name) .....…….

Witness signature……...

(Relationship to Participant): …….

Power of attorney [ ]

OR

Staff member: [ ]

Staff role: ……..

OR

Family member / Carer [ ]

Relationship to participant: ……....

Participant research ID number ……

<u>Name of Researchers:</u>

Dr. Alison Laver-Fawcett - (Research Supervisor)

Eden Marrison, Lead Researcher - (Occupational Therapist, York Hospital)

Alex Porter – (Research Assistant)

MDT participant consent forms

Title of study:

Face and content validity of the Structured Observational Test of Function (SOTOF) from the perspective of patients with a neurological diagnosis and a stroke rehabilitation multi-disciplinary team.

Please read and complete this form carefully. If you are willing to participate in this study, sign and date the declaration at the end. If you do not understand anything and would like more information, please ask.

Please initial box:

11. I confirm that I have read the information sheet dated..... (version 2) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

12. I understand that my participation is voluntary and that I am free to withdraw at any point without giving any reason, without my employment or legal rights being affected. ☐

13. I understand that the research will involve:
    - Participating in a focus group which will be audio taped on a digital recorder. The purpose of the focus group is to discuss the benefits and/or limitations of the information provided by the Structured Observational Test of Function (2nd edition) completed assessment forms for the multi-disciplinary team. ☐
    - The focus group should take approximately 30 minutes.

14. I understand that all information about me will be treated in strict confidence and information that can be identified to me will only be discussed within the research group. The researchers are named at the top of this form. ☐

15. I understand that I will not be named in any written work (e.g. academic article, test manual) or presentation related to this study. ☐

16. I understand that any audio taped material will be transcribed and the transcript will not have my name on it. This transcript will be used solely for research purposes. The audiotape file will be password protected and stored in a restricted access folder on the York St. John University server. The audio file will be deleted on completion of the study and within a maximum of 5 years. ☐

17. I would like to be informed of the results of the study via either email or post and give my consent for the research team to do so. ☐

I freely give my consent to participate in this research study and have been given a copy of this consent form for my own information.

Signature: _____

Print name: _____

Date: _____

Witnessed by: _____

Participant research ID number ……

Name of Researchers:

Dr. Alison Laver-Fawcett - (Research Supervisor)

Eden Marrison, Lead Researcher - (Occupational Therapist, York Hospital)

Alex Porter (Research Assistant)

Appendix 11: Direct quotes representing themes (patient participants)

Theme	Quotes
4. Understanding of the purpose of the SOTOF.	S01: 'what I was capable of doing' S010: 'To see what I'm capable of, if I know my left from my right, if I know direction and also if I can identify things'. SO2: 'The purpose of the assessment, I think, was to see how I could cope with various aspects of hospital life. Probably in an intellectual way. How I could be dealt with, what level I could be dealt with…....But I think that people who are dealing with erm, patients, perhaps need to know at what level to erm aim their instructions at'. SO3: 'Well, to see how much use I've got, obviously, with me own limbs'. S04: 'To find out if I understood' SO5: My, uhm, mental capacity to do things. S06: 'Trying to find out where we're going, making progress I think… S06: I think my abilities to do everyday tasks, getting dressed, feeding myself and thinking for myself as well' S08: 'Uhm, I don't know really… S08: Washing my face and things like that. I couldn't get these fingers going'. SO9: Tactile things. Uhm. Ability to dress yourself, ability to feed yourself, and to follow instructions. SO7: 'I have no idea' INT: And did you think that could been explained to you? At the beginning perhaps or at some point during it? *reason for doing tes* SO7: Well it probably was but I wasn't taking it in

5. Positive experience of completing the SOTOF.	**Regarding length of the test:** S01: 'Pretty quick really' S010: 'Just about right' SO2: 'I didn't think the, for me, it didn't seem too long. Perhaps for other people they may'. S03: 'I thought it was sufficient' SO5: I thought it was what one would expect really. S06: Okay within what I'd call a normal space of time. Not taking too long or it wasn't rushed S09: Fine. S08: No problem **Regarding the instructions they were given during the assessment:** S010: Personally quite good… Easy I thought. S02: I think it's a very clear test… The instructions that were given to me were very clear and quite easy to follow…. …and I was quite happy listening to the instructions. Which were quite clear and concise. S03: they was easy enough…They were clear enough. S04: Well I must have found following them alright because I, er took it all in. S05: Oh, easy SO6: Erm, comfortable, quite easy yeah. They're quite clear in what they want you to do and I'm doing them to the best of my ability S07: Erm, easy apart from one I think SO8: Oh no I could understand SO9: Easy. **Regarding rests / breaks needed during the**

	assessment: S010: I was told just take your time and if you want to rest, rest. S02: The breaks were long enough for me to prepare myself for the next session. SO3: No, if I had of done, I would of said I'm feeling too tired, I don't want to go no further. Which were explained to me that I could do that. SO4: *did you need a rest* 'No' S05: Rests? No. SO7: *did you need a rest* 'No'. SO9: *did you need a rest* 'No'. **General positive comments about experience:** S01: I enjoyed it S010: I felt fine…Quite confident S03: No I think I enjoyed it all. S05: Well I was interested SO6: Very good, it's interesting yeah. It's er, I found everything as I've come through the whole process has been interesting. S09: This one today was better. Because it gave me chance to shine.
Subtheme: assessors impact on experience	SO2: I felt quite comfortable… …I did not feel embarrassed at doing it

	S03: Okay. There were no pressure… I didn't feel there were any stress on me what so ever…. That like I said they put you at ease actually, right from the start… S06: Comfortable. I've got confidence in the girls y'know, very confident with them which makes me feel at ease. S06: They make you so relaxed and that's a great thing to me. So I'm quite nervous about it all, I'm nervous about like this arm doing something silly, like it wanders off and does things on its own…. S06: But they make you comfortable. Very capable S010: I thought they were quite good really S08: She was a very nice young lady and very patient with my hearing
Subtheme: learnt from doing the test	S010: Quite usefull. S03: I think I learnt a little bit from it S05: Well I was interested S06: Bit of a shock to say… S06: Simple everyday tasks become a problem... S06: And pouring the drink. [Inaudible] felt as though they were coming back S08: Well alright but I find there's a lot I can't do… S08: I was shocked actually… S08: I thought I could a lot more than that… S08: I didn't follow them as straight as I thought I would. S09: Because it gave me chance to shine.
6. Negative experience of completing the SOTOF	S02: is a little bit long. It's divided into three sections, perhaps it could be just done in three sections

	S07: It took quite a long time. S05: it was slightly repetitive. S05: And there was some unnecessary repetition in it. Like where to place a fork or a cup and things. S01: oh you feel a bit silly… …a bit frustrating sometimes S010: Well in my case I think it's a bit demeaning [sic] to say 'what is that?' when you know, well it's a bowl, what's that? It's a jug. But that's for me. S06: You know, and you feel like everything you're doing is being watched… S06: I find it a little bit nervous but. S07: I felt like a child. S07: Um, not particularly comfortable… S07: Well I didn't understand what it was about...There's too many different things going on. S09: Well it didn't give people a chance to express themselves, to do more than what they were asked to do
Subtheme: too easy	SO2: In some respects a little bit too easy. S05: I thought it was easy… I would have thought it might have been more searching SO7: Well it was quite easy… S07: A whole, a whole lot of it was easy. S010: Well in my case I think it's a bit demeaning [sic] to say 'what is that?' when you know, well it's a bowl, what's that? It's a jug. But that's for me S03: No, I think it was simple enough.

Appendix 12: Member checking email

16/02/2019
Dear, participant of SOTOF focus group

Thank you for taking part in the focus group on Tuesday 11th December. The recording has been transcribed and analysed, and the following themes identified:
1. Reliance and importance of a verbal handover
2. Importance of having a score attached to a test
3. Lack of awareness of SOTOF - not imbedded into the service enough
4. Usefulness to inform practice:
    subtheme 1: documentation (including changes to layout of SOTOF)
    subtheme 2: SOTOF is best for a specific client group (lower level patients)

I have attached two documents;

- a document to provide descriptions of each theme
- a document that demonstrates quotes that fed into each of the themes.

It would be helpful if you could look at the themes to ensure that your opinions and thoughts have been captured in the analysis. In particular, please have these questions in mind as you look over the themes:

- Is there anything you mentioned or heard during the focus group that you felt was important that has not been captured by the themes?
- Do these themes reflect your thoughts and feelings about the SOTOF?

If you feel there are important opinions/thoughts expressed during the focus group that are not in the themes, then please email me before Monday 11th March 2019.

If I do not hear back from you I will assume you agree that the themes are a credible representation of the focus group.

Thank you for your cooperation

Best Wishes,
Eden Marrison

Appendix 13: Laver (1994) study face validity questionnaire

THE EVALUATION OF A NEWLY DEVELOPED OCCUPATIONAL THERAPY ASSESSMENT TO TEST PERCEPTUAL FUNCTION IN ELDERLY PEOPLE FOLLOWING STROKE.

PATIENTS QUESTIONNAIRE - FACE VALIDITY STUDY.

Patient Details.

Name…… Age ……. Sex ……. Ward / Address……..

Primary Diagnosis ……..

Secondary Diagnoses …….

Parts of Assessment Administered. (Please circle)

Screen Task 1 Task 2 Task 3 Task 4

" You have just been given an assessment. I'm now going to ask you some questions about the assessment. Your answers will be used to develop this assessment so it is as suitable as possible for people like yourself.

1. What did you think this assessment was for?

2. Was this (were these) task(s) something you would normally do?

3. What did you think of the assessment?

4. Did you mind being asked to do this task (these tasks)?

5. What do you think this assessment was testing?

6. Please answer Yes or No to the following questions. Did you find the assessment…

1 Easy

2 Upsetting

3 Boring

4 Useful

5 Enjoyable

6 Relaxing

7 Difficult

8 Stressful

9 Interesting

10 Irrelevant

7. Have you any other comments about the assessment?

Thank you for answering these questions.

Administered and filled in by

Signature…….. Date …….

Appendix 14: Laver (1994) study 'purpose of the SOTOF' results

Table 4.11 : Patients perceptions of the purpose of SOTOF (n = 40)

Type of response	% occurrence of this type of response
assessing ability / function	75.0%
the extent of brain damage / how "bad" stroke is	27.5%
to "help me"	22.5%
to help the occupational therapist and / or the Multidisciplinary Team	15.0%
to assess problems	12.5%
to assess ability to wash / dress / eat / drink (ie. Activities of Daily Living)	10.0%
to test ability to see and / or feel	7.5%