Mixed methods study: Employers' needs when supporting stroke survivors to return to work

Aim and objectives:

The aim of this study was to explore employers' needs for supporting stroke survivors to return to- and stay in work post-stroke. Study objectives were as follows: 1) To identify and explore factors influencing employers' support for stroke survivors returning to work; 2) Describe the frequency and distribution of employer-related barriers, and investigate their relationships with employers' socio-demographic characteristics; and 3) Integrate findings across data sources to increase validity and understanding of employers' needs.

Data collection

In this study, volunteers were asked to participate in any of the following:

- A 10-minute online survey conducted via Microsoft Forms
- A 60-minute interview via Microsoft Teams

Prior to administration, the survey tool (Appendix 1), semi-structured interview topic guide (Appendix 2), were checked with relevant others (e.g., Human Resources consultant, research team) to ensure wording was clear, and the tool questions had face validity.

The survey included demographic characteristics of employer respondents and their organisations. The survey also asked questions relating to respondents' past relevant experience and knowledge of the return-to-work process for stroke survivors. The survey was anonymous, unless respondents choose to submit their name and email address at the end (optional question) to take part in the interviews.

The study adverts are presented in Appendices 3 and 4. Prior to taking part in the survey and/or interviews, participants were presented with participant information (Appendices 5 and 6), including privacy notices regarding who will have access to their data, and how it would be shared in future with third parties. As part of this they were informed that any personal identifying details in transcripts would be replaced with unique identification numbers and any other personal identifying details (e.g., name of organisation) omitted or replaced with pseudonyms. Survey respondents were presented with an online consent form (at the end of the participant information), with consent indicated upon submission of the form (Appendix 5), and interview participants completed a verbal consent form with the PhD researcher (Appendix 7).

Data storage and analysis

Survey responses (multiple choices responses, text) were exported from Microsoft Forms as a Microsoft Excel spreadsheet (.xlsx). The text responses to multiple choice questions were converted by one researcher to numbers to enable quantitative analysis in SPSS (version 28) (.sav). This was conducted using a numerical coding system per response option (e.g., yes=1, no=2) (see Appendix 8 for coding label definitions). Reasons for exclusion of respondent

cases from the analysis are included in Appendix 9. The survey was anonymous, unless respondents chose to submit their name and email address at the end (optional question) to take part in the interviews. Any names and email addresses submitted were saved in a password-protected Microsoft Excel spreadsheet on Microsoft Teams, accessible to the PhD researcher and Principal Investigator. Further names and email addresses were added to this document when potential volunteers contacted the PhD researcher (e.g., following advertising of the interviews).

Interviews were conducted, recorded and transcribed using Microsoft Teams. Audio recording files for interviews were uploaded to Microsoft Stream and saved on Microsoft Teams. Access to the recordings was only permitted for the PhD researcher and the Principal Investigator. Interview transcripts were by one researcher against the transcription produced via Microsoft Teams. Transcriptions were anonymised and saved as Microsoft Word files. Anonymised transcriptions for interviews were imported into NVivo software (version 12) to enable framework analysis (.nvpx). The coding guide is shown in Appendix 10.

Appendices

Appendix 1. Survey tool

Demographic details:		
Construct	**Question**	**Response format**
Attention check (to identify bot responses)	1. This first 9uestion is t3sting whether you are a real pers0n. **Please select one of the options below, such as Monkey.** The qu3stion is: Which of these is not an animal?	Cat Monkey Elephant Banana Donkey
Age	2. What is your age group?	18-25yrs 26-30yrs 31-35yrs 36-40yrs 41-45yrs 46-50yrs 51-55yrs >55 yrs Prefer not to say
Gender	3. What is your gender? (note: if you prefer to self-describe in another way, please type response in the 'other' option)	Male Female Prefer not to say Other (open-ended)
Race/ethnicity	4. What is your race/ethnicity?	Asian or Asian British Black, Black British, or Caribbean background Mixed or multiple ethnic groups White Other ethnic group Prefer not to say
Job title	5. What are your job responsibilities?	Please state, or type “prefer not to say”

Country location of occupational role	6. In what country is your occupational role based? (please state)	
Lived experience of RTW and WR after stroke in workplace	7. Do you have personal experience returning to work after a stroke?	Yes/No/Prefer not to say
	8. Do you have professional experience supporting a stroke survivor employee to return to- and/or stay in work after a stroke?	Yes/No/Prefer not to say

Appendix 2. Interview topic guide

Introductory statement
"I am a researcher at the University of Nottingham working on a project that aims to work with employers to design a specialist guide for employers and stroke survivors to support their return to work. Today, I would like to ask you some questions about what you think helps or makes it difficult for employers to support stroke survivors in this way, and what could influence the introduction and use of such a guide in your organisation.

This interview will be recorded [check their preference for video or audio recording]. Your name will not be mentioned on any published documents, and any names or places you might refer to will be changed (i.e., pseudonymised) when transcribed. All information you provide will be kept confidential and only used to develop our understanding for research purposes. You can decline to answer any questions you do not feel comfortable answering, or withdraw from this study at any time, without giving a reason"

Item	**Beginning of interview**	
		Question
1	*Perspective viewpoint*	**Can you tell me whether you would be talking about your own return to work following a stroke, or a time when you supported an employee to return to work following a stroke?**
2	*Context*	**Can you tell me the size and industry of your organisation, the job roles of yourself and the employer/stroke survivor, and the country in which this role is based?**
3	*Different stages of RTW process*	**Can you briefly outline what happened when you/your member of staff returned to work following your/their stroke.** Prompts: - When did the stroke happen? - Who made first contact, and when? - What happened before you/they returned to work? (e.g. assessments, planning, discussions with health professionals, workplace visits, etc) - What happened when you/they returned to work? (e.g. accommodations, interactions with others in and outside of workplace, treatments received) - Are you/they still working in that role? (if yes, is extra support being provided or is the role exactly as it was before the stroke?) (if no, can you tell me a bit more about what happened?)
4	*Different stages of RTW process*	**How would you define the RTW process in terms of stages, and at what points did these occur?** (paraphrase back to them based on what has already been said if needed)
5	*Facilitators for employer support during RTW process and beyond*	**Who, or what <u>helped</u> you/your employer provide support for the stroke survivor employee/you to return to- and stay in work? If so, can you tell me about this?**

	(including contextual factors) *Also environmental context and resources (TDF domain)/physical opportunity (COM-B)*	Prompts: e.g., - knowledge, skills and abilities of the employer (e.g., communication skills, knowledge of stroke and the RTW process, etc) - co-workers - the stroke survivor - their family/friends - infrastructure of the organisation (e.g., social architecture, maturity, size, or physical environment) - existing policies and practices (e.g., national, regional, within workplace) - resources available (e.g., staffing levels, access to Internet, training, time availability, systems available, financial status of organisation, support through social networks) - any external support (e.g., health or social care professionals, charities, government-funded services) - legislation, welfare, or insurance systems - culture/politics/global or local events at the time (e.g., organisational restructuring)
6	*Barriers for employer support during RTW and beyond (including contextual factors)*	**Who, or what <u>made it difficult</u> for you/your employer to provide support for the stroke survivor employee/you to return to- and stay in work? If so, can you tell me about this?** Prompts: e.g., - co-workers - the stroke survivor - their family/friends - the organisation (workplace – Human Resources, targets (e.g., sickness absence), policies and procedures, restructuring, staff shortages, etc) - resources available (e.g., access to Internet, time availability, systems available, financial status of organisation, support through social networks) - any external support (e.g., health or social care professionals, charities, government-funded services) - legislation, welfare, or insurance systems - culture/politics/global or local events at the time

If not fully covered in the previous questions, select from these TDF-related questions about their experience of the post-stroke RTW process (either as a stroke survivor, or an employer of a stroke survivor)			
	TDF domain	**COM-B domain**	**Question**
7	*Professional role and identity*		**What was your role during the RTW/retention process post- stroke?**

			Prompt: e.g., any involvement in assessment, setting anything up/planning or preparing for the RTW, collaborating with others, monitoring the RTW, reporting to others, etc
8	*Skills*	*Psychological capability*	**What <u>skills</u> did you need during the RTW/retention process post-stroke?** Prompts: e.g., Anything needed to facilitate the RTW/retention process…
9	*Beliefs about capabilities*	*Psychological capability*	**How confident were you that you could navigate the RTW process effectively? (either as a stroke survivor or employer)** Prompt: If you did not feel confident, is there anything that might have helped to increase your confidence? How confident do feel about it now?
10	*Reinforcement*	*Automatic motivation*	**What was the incentive for supporting the stroke survivor to return to- and stay in work (employer)?** **What was the incentive for returning to work (stroke survivor)?** Prompts: - E.g., regional or national performance measures, policies, regulations, or guidelines, organisational culture (beliefs, values) - Personal beliefs or values - Perceived benefits to the stroke survivor, employer, co-workers, organisation, society…(e.g., financial, social wellbeing, etc) - Perceptions of the stroke survivor (e.g., their value) - Perceptions of the organisation and/or employer (e.g., their employee benefits package) - What would need to happen for you to continue supporting the stroke survivor (employer)/
11	*Beliefs about consequences*	*Reflective motivation*	**What did you think would happen as a result of your actions (RTW or retention-related)?** Prompts: - - Would it help you or anyone else, or not? - What benefits might be gained? - Would there be any risks or costs involved?
12	*Social influences*	*Social opportunity*	**Is there anyone who influenced what you thought or did during the RTW/retention process?** Prompts: - e.g., senior management, co-workers, stroke survivor, stroke survivor's family/friends, people outside of the organisation (e.g., other organisations)

13	*Emotions*		**Can you tell me about the emotions you experienced during the RTW process?** Prompts: - e.g., anxiety, sadness, anger, frustration, guilt, happiness
14	*Behavioural regulation*		**What did you need to do before taking actions during the RTW process?** Prompts: e.g., planning of actions, self-monitoring
State the following: *"During this project we will be working with employers to design a specialist guide to help employers know how to support stroke survivors back into work…in future, we would like to learn what might influence the introduction and use of this guide within organisations."*			
15	*Gaining contacts for future decisions on implementation strategies*		**Who might be the key people in your organisation that we could talk to about this? (state that it is okay if they do not wish to disclose any names of anyone in their organisation)**
16	*Potential barriers to future implementation of the toolkit intervention*		**In your opinion, who (or what) might make it difficult to introduce and use such a guide within your organisation?** Prompts: - e.g., skills (e.g., communication, memory) and/or confidence for using the guide - workplace systems or environment - social influences (i.e., anyone who could influence their thoughts, feelings or actions towards using the guide) - emotions (e.g., those potentially experienced when carrying out particular actions, or those resulting from experience of the RTW process) - beliefs about consequences of using the guide - incentive/s (or lack thereof) for using the guide
17	*Potential facilitators to future implementation of the toolkit intervention*		**In your opinion, who (or what) might be helpful when introducing and using such a guide within your organisation?** Prompts: - e.g., skills (e.g., communication, memory) and/or confidence for using the guide - workplace systems or environment - social influences (i.e., anyone who could influence their thoughts, feelings or actions towards using the guide) - emotions (e.g., those potentially experienced when carrying out particular actions, or those resulting from experience of the RTW process) - beliefs about consequences of using the guide - incentive/s (or lack thereof) for using the guide
18			**Is there anything else you would like to add?**

Appendix 3. Survey advert

Appendix 4. Interview advert

Note: This advert also invited participants to take part in workshops, contributing to another objective (and study) linked to the overarching project.

Appendix 5. Survey participant information and consent

Information and Consent page for an Online Survey/Questionnaire
Study Title: Use of the intervention-mapping approach to aid co-design a toolkit for employers supporting stroke survivors to return to- and stay in work post-stroke
Short title: Co-design of a toolkit for employers of stroke survivors
This questionnaire is anonymous and will take approximately 5 minutes to complete.

Research Team: Prof Kate Radford, Kristelle Craven, PhD Rehabilitation and Healthcare Research, School of Medicine, University of Nottingham
Faculty of Medicine & Health Sciences Research Ethics Ref: FMHS 166-1122
Research has shown that employers often find it challenging supporting stroke survivors to return to- and stay in work post-stroke. This study is investigating what employers know about stroke and the return-to-work process, and their opinions on future resources that would be helpful.
Thank you for your interest. Please read through this information before agreeing to participate. You can ask any questions before deciding by contacting the researchers (details below). Taking part is entirely voluntary.
What will I be asked to do? In the next section, you will be presented with consent information, and options to select to indicate your consent to take part. You will then be asked to provide basic demographic information and answer questions regarding your knowledge of stroke and the return-to-work process. No background knowledge or experience is required. You will also be asked your opinion on resources that might be helpful in future. At the end you will be given the option to provide your name and email address to be entered into a prize draw to win a £50 Amazon voucher. You will also be given the option to indicate interest in further research activities. It should take you about 5 minutes to complete the questionnaire.
We would like you to answer all questions as honestly and completely as possible, however if there is a question you do not want to answer then there is a 'prefer not to say' option. You can withdraw at any point during the questionnaire for any reason, before submitting your answers, by clicking the Exit button/closing the browser. The data will only be uploaded when you click the SUBMIT button on the final page. As this survey is anonymous, it will not be possible to withdraw your data after you have clicked the SUBMIT button. If you work at- or with the University of Nottingham, your participation or withdrawal from the study will not affect your current or future relationships at the University.
What are the disadvantages of taking part? It is possible that you may find answering questions about your knowledge of stroke or the return-to-work process upsetting or uncomfortable. Please take time to think carefully about whether it might be an upsetting or sensitive topic for you at the moment.
What are the advantages of taking part? Your contribution will help the researchers to understand more about what employers need to guide stroke survivors to return to- and stay in work.
Who will know I have taken part in the study? No one will know you have taken part in this study. Your IP address will not be visible to- or stored by the research team. Only the research team will have access to your name and email address, if you contact us, wish to be entered into a draw to receive a £50 Amazon gift card, or show interest in taking part in other research activities.
What will happen to your data? When you click the submit button at the end, it will be uploaded into a database stored in a folder on a restricted access server at the University, under the terms of its data protection policy. Only the research team will have access to the

database for research purposes. Data is kept for a minimum of 7 years, it may be retained for longer periods of time where it is of continual value to users. The results will be written up as part of a PhD thesis by publication. On successful submission of the thesis, it will be deposited both in print and online in the University archives, to facilitate its use in future research. Journal articles and/or conference abstracts reporting on results of the research may also be published. The overall anonymised data from this study may be shared for use in future research and teaching (with research ethics approval). Any personal data you choose to submit (e.g., your name and email address) will be stored on a password-protected database and handled separately from your completed questionnaire. It will not be possible to link the sets of data. Your e-mail address will only be kept as long as needed before being destroyed (unless you indicate you wish to be informed about study findings, in which case we will delete it immediately after informing you of the findings). For further information about how the university processes personal data please see:
https://www.nottingham.ac.uk/utilities/privacy.aspx/

Who will have access to your data? The University of Nottingham is the data controller (legally responsible for data security) and the Supervisor of this study (named below) is the data custodian (manages access to the data) and as such will determine how your data is used in the study. Your research and personal data will be used for the purposes of the research only. Responsible members of the University of Nottingham may be given access to data for monitoring and/or audit of the study to ensure it is being carried out correctly.
If you have any questions or concerns about this project, please contact:
Kristelle Craven E-mail kristelle.craven1@nottingham.ac.uk) or if you have any concerns about any aspect of this study please contact the Research Supervisor: Prof Kate Radford Email kathryn.radford@nottingham.ac.uk).
If you remain unhappy and wish to complain formally, you should then contact the FMHS Research Ethics Committee Administrator E-mail: FMHS-ResearchEthics@nottingham.ac.uk
Thank you for participating!

Please tick each box to continue:

- ○ I confirm that I have read and understood the information above
- ○ I am 18 years old and/or older
- ○ I work in an occupational role involving staff responsibility
- ○ I am proficient in use of the English language
- ○ I understand that my participation is voluntary and I can end the study at any time and withdraw my data by clicking the EXIT button
- ○ I understand that my answers are anonymous
- ○ I understand the overall anonymised data from this study may be used in the future for research (with research ethics approval) and teaching purposes.

I have read and understood the above information, by clicking the NEXT option below, I indicate my willingness to voluntarily take part in the study. If you choose proceed with the survey, then consent will be assumed.

- ○ NEXT – I consent to take part
- ○ EXIT - I do not give consent

Appendix 6. Interview participant information

Note: This participant information also referred to potential participation in workshops, contributing to another objective (and study) linked to the overarching project.

Study Title: Use of the intervention-mapping approach to aid co-design a toolkit for employers supporting stroke survivors to return to- and stay in work post-stroke

PARTICIPANT INFORMATION SHEET

Research Ethics Reference: FMHS 166-1122
Version 1.0 Date: 16.02.2023

We would like to invite you to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. One of our team will be happy to go through the information sheet with you and answer any questions you have. Please take time to read this carefully and discuss it with others if you wish. Ask us anything that is not clear.

What is the purpose of the research?

The number of working-age stroke survivors is ever-increasing, and approximately two-thirds are left with disabilities that make it difficult to return to- and stay in work. When an employee is on sickness absence for a long time or leaves the company, it can be stressful for employers and colleagues. It can also harm company morale, and be financially damaging. Stroke costs the UK approximately £26 billion every year.

Research has shown that many employers lack understanding about stroke, and don't know what to do to support stroke survivors through the return-to-work process. Currently, there are no specialist resources that address all the known challenges to help employers provide this support. This study aims to further explore what helps or makes it difficult for employers to support stroke survivors to return to- and stay in work. We would also like to work with employers to design a specialist toolkit resource to guide their support for stroke survivors returning to work.

Why have I been invited to take part?

You have been invited to take part in this research because you are aged 18 years or older.

The criteria for taking part are:

- You work in an occupational role involving staff responsibility (e.g., supervisor, manager, Human Resources, Occupational Health)
- You have previously supported a stroke survivor employee to return to- and/or stay in work following a stroke, **OR** you are a stroke survivor yourself and have personal experience of returning to work following a stroke.

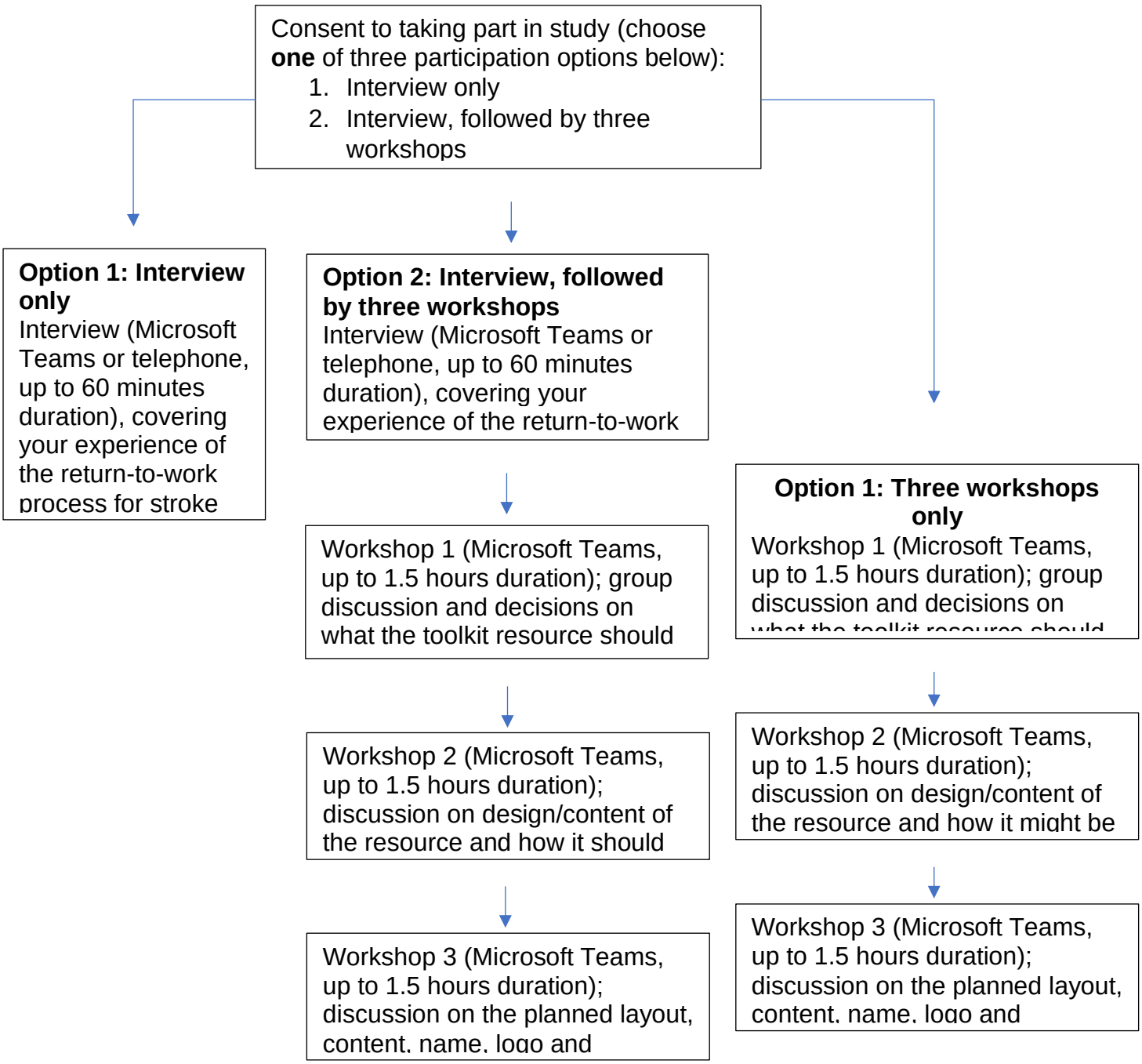
We will be recruiting around 10 participants for the interviews, and 10 participants for the workshops.

Do I have to take part?

It is up to you to decide if you want to take part in this research. We will describe the study and go through this information sheet with you to answer any questions you may have. If you agree to participate, we will ask you to verbally consent to taking part. We will sign and date the consent form on your behalf, and email you a copy to keep. However, you would still be free to withdraw from the study at any time, without giving a reason, simply let the research team know. If you work at, or with the University of Nottingham, your participation or withdrawal from the study will not affect your current or future relationships at the University.

1. **What will happen to me if I take part?**

A researcher will contact you to go through the information sheet and explain the procedure, and go through the inclusion criteria with you to check it is suitable for you to participate. If you agree to take part in the study, the researcher will then ask if you wish to take part in the interview **and/or** any of the three workshops. **You do not have to take part in all of these activities. It is your decision which activities you take part in. For example, you may wish to take part in both the interview and the workshops. Alternatively you may choose only to take part in the interview, or skip the interview and attend the workshops instead (see diagram below).**



Interview: If you select to take part in the one-off interview, the researcher will organise the interview with you at a mutually convenient time. This interview will last up to 60 minutes and will take place over Microsoft Teams or by telephone, whichever is more convenient for you. The interview questions will cover your experience of the return-to-work process for stroke survivors, including what previously helped or made it difficult. The questions will also ask your opinions on things that could affect introduction and use of a specialist toolkit resource for employers and stroke survivors in your organisation. These questions will be exploratory, and you will have full control of the answers you provide and the topics

you wish to discuss. You have the right to decline to answer any questions you do not feel comfortable answering, without giving a reason.

Workshops: If you decide to take part in the three workshops, the researcher will inform you of the dates and times these will be taking place. The workshops will last up to 1.5 hours each and will take place over Microsoft Teams. You will not have to travel for the interview and/or workshops, and all contact with the research team with be completed remotely. No face-to-face contact will be needed. The workshops will involve group discussion and decisions on what the toolkit resource should focus on (workshop 1), discussion on design/content of the resource and how it should be introduced into workplaces (workshop 2), and discussion on the planned layout, content, name, logo and branding of the resource (workshop 3). You have the right to decline to take part in any of the workshop activities, without giving a reason.

All interviews and workshops will be audio recorded, and these recordings will then be transcribed and analysed by the research team. It is up to you whether you turn your camera on or not during the interview (Microsoft teams interviews only) or workshops. If you are still happy to take part, then you will then be asked to provide verbal consent for taking part.

2. What are the research methods being used?

The interviews conducted as part of this study will be semi-structured. This means that the researcher will seek to discuss topics but the more specific details to be discussed will be in your control. The interviews will be video or audio recorded (depending on your preference), transcribed and then analysed using a qualitative research technique called framework analysis. This will involve the information and insight you provide being summarised and grouped into themes, using a theoretical framework to guide analysis.

Workshop attendees will be presented with anonymised findings from previous research activities within the project (including the interviews you are being invited to take part in). The research team will then encourage group discussion on certain topics, based on the findings presented. You may be asked to discuss the topics as one group, or if there are enough participants, you may be asked to discuss them in smaller groups within breakout rooms on Microsoft Teams. The group as a whole will then make decisions on the topics discussed. The workshops will be recorded and transcribed, and the data used to inform design of the toolkit resource and preliminary strategies for its future introduction into workplaces.

3. Are there any risks in taking part?

No physical risks are involved in taking part in the interviews or workshops; however some topics may be sensitive. For example you may feel uncomfortable discussing experiences with the return-to-work process, either as a stroke survivor or an

employer supporting a stroke survivor. To reduce any potential risks, the researchers will approach topics with caution and sensitivity at all times, giving you full control of your answers and the level of detail in your response. If you become upset at any time during the interview, the interview will be stopped and time will be given for you to recompose yourself. If you become upset at any time during a workshop, one of the research team will invite you to a breakout room within Microsoft Teams or call you on the telephone (if preferred), and time will be given for you to recompose yourself. The decision to continue, postpone or stop the interview or workshop will be at your discretion.

4. Are there any benefits in taking part?

There may be no direct benefits to you taking part in this research. However, your contribution will help us to understand what employers need to guide stroke survivors through the return-to-work process, and how this can be achieved via use of a toolkit resource. Successful development and future implementation of the resource may lead to stroke survivors successfully returning to- and staying in work in future, leading to a range of personal and financial benefits for all involved.

5. Will my time/travel costs be reimbursed?

Participants will not receive an inconvenience allowance to participate in the study. Due to the virtual, online mode of the interviews and workshops, no travel expenses will be offered.

6. What happens to the data provided?

The research data (including consent forms) will be stored confidentially and securely using a participant identification number, generated according to when you took part in the interview, and this will be used instead of your name. We will save the recordings and research data using the participant identification number, so that none of the data will have your real name associated with them. Anonymised data will be stored separately from un-anonymised data. Only the research team will have access to the un-anonymised data, code linkage record, and your personal data (e.g., name and contact details) via password-protected databases on a restricted access computer system. Any information you provide in the interviews or workshops, regarding identifiable names and places, will be pseudonymised in the transcripts and in any linked research publications. Your name and any information about you will not be disclosed outside the study centre.

At the end of this PhD project, raw, un-anonymised audio/video recordings will be permanently deleted. All anonymised research data will be deposited in the University of Nottingham (UoN) research data archive (https://rdmc.nottingham.ac.uk). UoN will retain and preserve research data in line with UoN requirements for a minimum of 7 years, but data will be retained for longer periods of time where it is of continual value to users. We would like your permission to use anonymised data in future studies, and to share our research data (e.g. in online databases) with other researchers in other Universities and organisations both inside and outside the European Union. This would be used for research in health

and social care. Sharing research data is important to allow peer scrutiny, re-use (and therefore avoiding duplication of research) and to understand the bigger picture in particular areas of research. As part of this, we would like your permission to use fully anonymised direct quotes in research publications.

7. What will happen if I don't want to carry on with the study?

Even after you provide informed consent to take part, you are free to withdraw from the study at any time without giving any reason and without your legal rights being affected. Any personal data will be destroyed. If you withdraw we will no longer collect any information about you or from you but we will keep the research data that has already been collected and stored as we are not allowed to tamper with study records. This information may have already been used in some analyses and may still be used in the final study analyses. To safeguard your rights, we will use the minimum personally identifiable information possible.

8. Who will know that I am taking part in this research?

Data will be used for research purposes only and in accordance with the General Data Protection Regulations. Any transcripts and electronic data will be pseudonymised and stored securely, as detailed above. Under UK Data Protection laws the University is the Data Controller (legally responsible for the data security) and the Chief Investigator of this study (named above) is the Data Custodian (manages access to the data). You can find out more about how we use your personal information and to read our privacy notice at:
https://www.nottingham.ac.uk/utilities/privacy.aspx/
Designated individuals of the University of Nottingham may be given access to data for monitoring and/or audit of the study to ensure we are complying with guidelines. With your consent, we will keep your personal information on a secure database in order to contact you for future studies.

Anything you say during an interview or workshop will be kept confidential, unless you reveal something of concern that may put yourself or anyone else at risk. It will then be necessary to report to the appropriate persons. If you choose to take part in any or all of the workshops, we will ask you to be mindful of confidentiality requirements if you mention anything personal to another person or organisation during the workshop session.

9. What will happen to the results of the research?

The research will be written up as part of a thesis by publication for a PhD in Rehabilitation and Health Care Research. On successful submission of the thesis, it will be deposited both in print and online in the University archives, to facilitate its use in future research. The thesis will be published open access. Journal articles and/or conference abstracts reporting on anonymised findings of the research may also be published.

10. Who has reviewed this study?

All research involving people is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by the Faculty of Medicine and Health Sciences Research Ethics Committee (Reference number: FMHS 166-1122)

11. Who is organising and funding the research?

The study is organised by Prof Kate Radford, Professor in Rehabilitation Research at the University of Nottingham. The study is being funded by the National Institute for Health and Care Research Applied Research Collaboration (NIHR ARC), the Ossie Newell Foundation, and the Elizabeth Casson Trust.

12. What if there is a problem?

If you have a concern about any aspect of this project, please speak to the researcher, Kristelle Craven, or the Principal Investigator, Prof Kate Radford, who will do their best to answer your query. The researcher should acknowledge your concern and give you an indication of how she intends to deal with it. If you remain unhappy and wish to complain formally, you can do this by contacting the FMHS Research Ethics Committee Administrator, Faculty Hub, Medicine and Health Sciences, E41, E Floor, Medical School, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH or via E-mail: FMHS-ResearchEthics@nottingham.ac.uk.
Please quote ref no: FMHS 166-1122

13. Contact Details

If you would like to discuss the research with someone beforehand (or if you have questions afterwards), please contact:

Kristelle Craven
Centre for Rehabilitation & Ageing Research
B109, Medical School, QMC, University of Nottingham, Nottingham, NG7 2UH
Email: kristelle.craven1@nottingham.ac.uk

Appendix 7. Verbal consent form for participants taking part in interviews

Note: This participant information also referred to potential participation in workshops, contributing to another objective (and study) linked to the overarching project.

Interview and Workshop Participants Verbal Consent Form

Final version 1.0: 16.02.2023

Title of Study: Use of the intervention-mapping approach to aid co-design of a toolkit for employers supporting stroke survivors to return to- and stay in work post-stroke

REC ref: FMHS 166-1122

Name of Researchers:
Chief Investigator/Supervisor: Kate Radford, Professor Rehabilitation Research, Injury, Inflammation and Recovery Science, School of Medicine
Lead Investigators/student: Kristelle Craven, PhD student Rehabilitation and Health Care, School of Medicine
Other Key investigators: Dr Jain Holmes, Senior Research Fellow, Dr Jade Kettlewell, Senior Research Fellow, Rehabilitation, Injury, Inflammation and Recovery Sciences, School of Medicine

Telephone the participant and confirm that you are speaking to the relevant person. Then continue with the script below:

Date of verbal consent call (dd/mm/yy): __ / __ / __

Hello [*name of participant*], my name is Kristelle Craven and I am a PhD student calling in relation to the 'Employer toolkit' research study, which you are currently taking part in.
Is this a convenient time to call? ***(If yes, continue with the script; if not, establish if the participant wishes to be contacted at an alternative time or whether the participant no longer wishes to be contacted with regards to this study).***

You may have received some documents from myself recently, inviting you to take part in a Microsoft Teams or telephone interview about your experience of the return-to-work process for stroke survivors. The documents will have also invited you to Microsoft Teams workshops focusing on the design of a specialist toolkit resource for employers and stroke survivors. I wondered if you have had a chance to read the documents? ***(Allow participants to respond – if they have read it and no longer wish to be contacted with regards to this study, then thank them for their participation and say goodbye. If they are unsure or more positive then continue below)***

The purpose of the interview is to find out about people's experiences of the return-to-work process following stroke, including what helped and didn't help at the time. Questions will also be asked regarding what you think may influence use and introduction of a stroke-specialist toolkit resource in your organisation. The purpose of the workshops is to work with employers to design a toolkit resource, i.e., to decide on what the resource should focus on (workshop 1), the design/content of the resource and how it should be introduced into workplaces (workshop 2), and discussion on the planned layout, content, name, logo and branding of the resource (workshop 3). The interview and workshops will all be audio recorded, if conducted on Microsoft Teams it is your decision whether or not to turn the camera on.

The Ethics Committee, whose role it is to scrutinise research and protect patients, has agreed that we can take verbal consent i.e. obtain permission from you over the phone. Please let me reassure you that your participation or withdrawal from the study will not affect your current or future relationships at the University.

Can you please confirm the following:
I am aged 18 years or older
Record participant's response: Yes / No

I am currently employed in an occupational role involving staff responsibility
Record participant's response: Yes / No

I have experience supporting an employee to return to- or stay in work post-stroke, OR personal experience returning to work after a stroke
Record participant's response: Yes / No

I am proficient in use of the English language
Record participant's response: Yes / No

Do you have any questions you would like to ask me at this stage?
Record participant's response: Yes / No
If yes, record any questions and responses given, below.

Name of Participant: **Please initial box**

1. I confirm that I have read and understand the information sheet version number 1.0 dated 16.02.23 for the above study which is attached and have had the opportunity to ask questions. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without disadvantage. ☐

3. I understand that relevant sections of my data collected in the study may be looked at by the research group and by other responsible individuals for monitoring and audit purposes. I give permission for these individuals to have access to these records and to collect, store, analyse and publish information obtained from my participation in this study. I understand that my personal details will be kept confidential. ☐

4. I understand that the interviews and workshops will be video- or audio recorded (depending on my preference) using an automated transcription service and that anonymous direct quotes from the interview may be used in the study reports. ☐

5. I understand that information about me recorded during the study will be made anonymous before it is stored in a secure database. Data will be kept for 7 years after the study has ended and then deleted. ☐

6. **Optional:** I agree that my anonymous research data will be stored and used to support other research in the future, and shared with other researchers including those working outside the University. ☐

7. I understand that what I say during the interview and workshops will be kept confidential unless I reveal something of concern that may put myself or someone else at any risk. It will then be necessary to report this to the appropriate persons. ☐

8. I understand that the information discussed in the workshops may be sensitive and is confidential. I agree to respect other participant's privacy and will not disclose what others have said in the workshops. ☐

9. I agree to take part in the above study.

Interview only ☐

Interview and workshops ☐

Workshops only ☐

_____	_____	_pp._____
Name of Participant	**Date**	**Signature**
_____	_____	_____
Name of Person taking consent	Date	Signature

Appendix 8. Coding label definitions used to analyse the survey data.

Variable (name in dataset)	Label definitions
Sex (Gender)	Male = 1 Female = 2 Other = 3 Prefer not to say = 0
Race/ethnicity (Raceethnicity)	White = 1 Mixed or multiple ethnic groups = 2 Asian or Asian British = 3 Black, Black British, or Caribbean background = 4 Other ethnic group = 5 Prefer not to say = 0
Age (Agegroup)	18-25 years = 1 26-30 years = 2 31-35 years = 3 36-40 years = 4 41-45 years = 5 46-50 years = 6 51-54 years = 7 55 years or more = 8 Prefer not to say = 0
Combined age groups (Combinedagegroups)	<40 years = 1 40-50 years = 2 50+years = 3 Prefer not to say = 0
Personal experience (Personalexperience)	Yes = 1 No = 2 Prefer not to say = 0
Professional experience (Professionalexperience)	Yes = 1 No = 2 Prefer not to say = 0
Combined experience variable (Combinedexperience) (i.e., whether they have any experience at all of post-stroke RTW (personal or professional)	Yes = 1 (where at <u>least one</u> of the two experience questions resulted in a 'yes' response) N=2 (where <u>both</u> of the two experience questions elicited a 'no' or 'prefer not to say' response)
Number of years of professional experience (Professionalexperienceduration)	< 5 years = 1 6-10 years = 2 11-20 years = 3 21-30 years = 4 31+ years = 5 Prefer not to say = 0
Organisation size (Orgsize)	Micro = 1 Small = 2 Medium = 3 Large = 4 Don't know/Prefer not to say = 0
Combined org size (Combinedorgsize)	Micro, small or medium = 1 Large = 2

	Don't know/Prefer not to say = 0
Access to OH or HR support (Access to HROH)	Yes = 1 No = 2 Don't know/Prefer not to say = 0
Access to trade union support (Accesstotradeunion)	Yes = 1 No = 2 Don't know/prefer not to say = 0
Sector (Orgsector)	Private = 1 Public = 2 Third sector = 3 Don't know/prefer not to say = 0
Occupational Role (OccRole)	Managerial/leadership role =1 Other=2 Don't know/prefer not to say = 0
Industry (Orgindustry)	Agriculture, Forestry and Fishing = 1 Mining and Quarrying = 2 Manufacturing = 3 Electricity, gas, steam and air conditioning supply = 4 Water supply, sewerage, waste management and remediation activities = 5 Construction = 6 Wholesale and retail trade; repair of motor vehicles and motorcycles = 7 Transportation and storage = 8 Accommodation and food service activities = 9 Information and communication = 10 Financial and insurance activities = 11 Real estate activities = 12 Professional, scientific and technical activities = 13 Administrative and support service activities = 14 Public administration and defence; compulsory social security = 15 Education = 16 Human health and social work activities = 17 Arts, entertainment and recreation = 18 Other service activities = 19 Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use = 20 Activities of extraterritorial organisations and bodies = 21 Other = 22
Timing of awareness of work performance difficulties (Awarenessofdifficultiestimepoint)	In the first month following their return to work = 1 In months 2-6 following their return to work = 2 In months 6-12 following their return to work = 3 >12 months following their return to work = 4 Don't know = 0 They didn't have any performance difficulties = 5 Prefer not to say = 0
Stroke knowledge (Totalstrokeknowledge)	Given as total score. Both questions amalgamated into one scale for analysis. One point per question option, with 0

	value given to 'did not know/prefer not to say' options. Maximum knowledge score across both questions = 7 points
RTW process knowledge (RTWprocessknowledge)	One point per question option, with 0 value given to 'did not know/prefer not to say' options. Maximum knowledge score = 8 points
Total score for perceived competency for RTW actions (Totalcompscore)	One point per yes response, with 0 value given to 'no/did not know/prefer not to say/action not needed' responses. Maximum score across items = 6 points
Individual item perceived competency scores (Compapplicable[number of item])	Variable to show responses based on 0=not applicable (i.e., 'this action was not needed' response selected), and 1=applicable. There were 6 versions of this variable, one per multiple choice option (i.e., each action being referred to).
Numberapplic	The sum of all the responses for the compapplicable variables (higher scores indicate more applicable responses)
Numberapplic2	The same as above except those with total scores of 3 or less were removed. This is because they would only have provided responses to half or less of the questions (i.e., only half the questions were applicable to them, so not enough info to answer question of their perceived competency as a whole?)
Total adjusted score for perceived competency for RTW process actions (Finalcompscore)	Shown as percentages for the number of items respondents selected "yes" to indicate they felt competent for that particular item (RTW process action)
Combinedindustry	Human health and social work activities = 1 Other = 2 Don't know/prefer not to say = 0

Note: Variables with "squared" or "cubed" in front, indicate transformed variables. I.e., where variables were transformed through square or cube transformations to see if this led to the data being normally distributed (and therefore parametric statistical tests possible).

Appendix 9. Reasons for exclusion of cases from survey dataset

ID no.	Time for completion	Trick question	Age check	Name and email address	Validation email
67	19:09:51	Passed	Passed	Only email address given	Passed
69	17:31:34	Passed	Failed	Name different to name in email address	Passed
76	17:27:54	Passed	Passed	Only email address given	Passed
79	16:59:56	Passed	Passed	Name different to name in email address	No response
81	18:23:34	Passed	Passed	Name different to name in email address	Passed
84	05:54:02	Passed	Passed	Name different to name in email address	No response
85	08:04:31	Passed	Failed	Name different to name in email address	No response

Reasons for exclusion

Two or more of the following:

- Failed trick question
- Failed age check
- Differences between name and email address given
- No/incorrect response to validation email

Appendix 10. Coding guide used for the interview framework analysis

The following objectives were used to develop the interview questions:

1. To identify and explore factors (including contextual factors) hindering or facilitating employers' ability to support stroke survivor employees to return to- and stay in work
2. To explore employers' perspectives on potential barriers/facilitators and contextual factors influencing future implementation of the toolkit intervention

The coding guide below has been based on the Sherbrooke Model (1) and the Theoretical Domains Framework (TDF).

Pre-defined categories and codes

Overarching category	**Code**	**Sub-code**	**Analytic approach**
Perspective viewpoint	Stroke survivor Employer of stroke survivor		Deductive
Stages of RTW process			Inductive
Barriers for employer RTW support	Employer	Professional role and identity	Deductive/inductive Inductive
		Knowledge	
		Skills	
		Beliefs about capabilities	
		Reinforcement	
		Beliefs about consequences	
		Emotions	
		Behavioural regulation	
		Other (add sub-codes)	
	Stroke survivor	Cognitive (residual disability)	
		Affective (residual disability)	
		Physical (residual disability)	
		Professional role and identity	
		Knowledge	
		Skills	
		Beliefs about capabilities	
		Reinforcement	
		Beliefs about consequences	
		Emotions	

		Behavioural regulation	
		Other (add sub-codes)	
	Other stakeholders	Social influences	
		Other (add sub-codes)	
Facilitators for employer RTW support	Employer	Professional role and identity	Deductive/inductive Inductive
		Knowledge	
		Skills	
		Beliefs about capabilities	
		Reinforcement	
		Beliefs about consequences	
		Emotions	
		Behavioural regulation	
		Other (add sub-codes)	
	Stroke survivor	Cognitive (residual disability)	
		Affective (residual disability)	
		Physical (residual disability)	
		Professional role and identity	
		Knowledge	
		Skills	
		Beliefs about capabilities	
		Reinforcement	
		Beliefs about consequences	
		Emotions	
		Behavioural regulation	
		Other (add sub-codes)	
	Other stakeholders	Social influences	
		Other (add sub-codes)	
	Environmental context and resources	Workplace system	
		Healthcare system	
		Legislative, welfare and insurance system	
		Culture/politics	
		Global and local events	
Occupational roles of suggested people who would likely	Inductive – make new codes, e.g., “HR director”		

make decisions on implementation strategies			
Contacts for decisions on implementation strategies	Keep contact details in password-protected Excel spreadsheet on Teams		
Potential barriers to implementation of toolkit			Inductive (question prompts are based on relevant TDF domains)
Potential facilitators to implementation of toolkit			

The table below includes definitions of the codes and sub-codes being used in the guide (TDF definitions taken from Cane et al. (2))

Code (based on Disability Prevention Paradigm)	**Sub-code (based on TDF domains)**
Employer The person being interviewed. I.e., a person in an occupational role with staff responsibility such as a supervisor, manager, HR or OH.	**Social/Professional role and identity** ***A coherent set of behaviours and displayed personal qualities of an individual in a social or work setting.*** Constructs include professional identity, professional role, social identity, identity, professional boundaries, professional confidence, group identity, leadership, and organisational commitment.
	Knowledge ***An awareness of the existence of something.*** Constructs include knowledge (including knowledge of the condition/scientific rationale), procedural knowledge, and knowledge of the task environment.
	Skills ***An ability or proficiency acquired through practice.*** Constructs include skills, skills development, competence, ability, interpersonal skills, practice, and skill assessment.
	Beliefs about capabilities ***Acceptance of the truth, reality, or validity about an ability, talent, or facility that a person can put to constructive use.*** Constructs include self-confidence, perceived competence, self-efficacy, perceived behavioural control, beliefs, self-esteem, empowerment, and professional confidence.
	Reinforcement ***Increasing the probability of a response by arranging a dependent relationship, or contingency, between the response and a given stimulus.*** Constructs include rewards (proximal/ distal, valued/not valued), probable/improbable), incentives, punishment, consequents,

	reinforcement, contingencies, sanctions, and stability of intentions.
	Beliefs about consequences ***Acceptance of the truth, reality, or validity about outcomes of a behaviour in a given situation.*** Constructs include outcome expectancies, characteristics of outcome expectancies, anticipated regret, and consequents.
	Emotions ***A complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter or event.*** Constructs include fear, anxiety, affect, stress, depression, positive/negative affect, and burn-out.
	Behavioural regulation ***Anything aimed at managing or changing objectively observed or measured actions.*** Constructs include self-monitoring, breaking habit, and action planning.
Other Stakeholders Others who might directly or indirectly influence employers' support for stroke survivors. This might include, for example, the stroke survivor, co-workers, senior management, HR, OH, union reps, health professionals, insurance agents (e.g., income protection insurance), disability liaison officers, and family of the stroke survivor.	**Social Influences** ***Those interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviours.*** Constructs include social pressure, social norms, group conformity, social comparisons, group norms, social support, power, intergroup conflict, alienation, group identity, and modelling.
Workplace system Anything about the workplace that might influence the employers' support for stroke survivors. E.g., physical aspects (e.g., noise levels), staffing levels, training opportunities, workplace systems, company finances, pre-existing (or lack of) guiding policies and procedures, communication from others (e.g., HR, OH), psychosocial factors such as senior management's willingness for stroke survivor to return, relationships with co-workers, etc.	**Environmental context and resources** ***Any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence, and adaptive behaviour.*** Constructs include environmental stressors, resources/material resources, organisational culture/climate, salient events/critical incidents, person x environment interaction, barriers and facilitators, and social pressure.
Healthcare system Anything about the healthcare system that might influence the employers' support for stroke survivors. E.g., communication with health professionals, adequacy of information provided about the stroke survivor's functional abilities, etc.	
Legislative, welfare, and insurance system Anything about the legislative, welfare and insurance system that might influence the employers' support for stroke survivors. E.g., Equality Act 2010, welfare benefits available to stroke survivor from the government (e.g., PIP), insurance agents and pay-outs provided (e.g., income protection insurance, critical illness insurance).	
Culture/politics	

The culture and/or politics surrounding the employer and stroke survivor at the time, that might influence employers' support. E.g., political campaigns, cultural norms (e.g., midlife MOT from British government)	
Global and local events Global and/or local events that took place at the time the employer was required the support the stroke survivor in planning, returning to- and sustaining their work participation. E.g., Covid-19, re-structuring with the workplace organisation	

1. Loisel P, Durand M, Berthelette D, Vézina N, Baril R, Gagnon D, et al. Disability prevention: new paradigm for the management of occupational back pain. Disease Management & Health Outcomes. 2001;9(7):351-60.
2. Cane J, O'Connor D, Michie S. Validation of the theoretical domains framework for use in behaviour change and implementation research. Implementation science : IS. 2012;7(1):37-.