Disability and Rehabilitation

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/idre20

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To cite this article: Blanca De Dios Perez, Jain Holmes, Tracey Elder, Rebecca Lindley, Nikos Evangelou, Roshan das Nair, Caolan Senior, Vicky Booth, Juliet Hassard, Helen L. Ford, Ian Newsome & Kate Radford (22 Oct 2024): Implementing vocational rehabilitation for people with multiple sclerosis in the UK National Health Service: a mixed-methods feasibility study, Disability and Rehabilitation, DOI: 10.1080/09638288.2024.2417031

To link to this article: https://doi.org/10.1080/09638288.2024.2417031

DISABILITY AND REHABILITATION
https://doi.org/10.1080/09638288.2024.2417031

RESEARCH ARTICLE

Implementing vocational rehabilitation for people with multiple sclerosis in the UK National Health Service: a mixed-methods feasibility study

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ABSTRACT

Purpose: To implement a job retention vocational rehabilitation (VR) intervention (MSVR) for people with multiple sclerosis (MS) and their employers in the UK National Health Service (NHS).

Methods: Multicentre, single-arm feasibility study with post-intervention interviews. MSVR was delivered by an occupational therapist (OT). Feasibility was assessed by recruitment rates, compliance, and practicality of delivery. Acceptability was assessed with post-intervention interviews. A survey assessed change in eight vocational outcomes (e.g., vocational goals, work instability) immediately post-intervention and at 3-month follow-up.

Results: Recruitment and training an OT was challenging. Twenty participants with MS, three employers, and three healthcare professionals were recruited. All participants but one completed the intervention. Factors affecting intervention adherence included annual leave and family responsibilities.

MSVR was associated with improved vocational goal attainment post-intervention ($t(18)=7.41$, $p=<0.001$) and at follow-up ($t(17)=6.01$, $p=<0.001$). There was no change to the remaining outcomes. Interviews identified six themes: intervention impact, accessibility of support, the OT's role, readiness for support, workplace supportiveness, and barriers to NHS delivery.

Conclusion: Challenges with recruitment, identifying newly diagnosed MS participants, and understanding the OT's training needs to deliver the intervention were identified. The intervention demonstrated acceptability, but participants wanted it to continue for longer to address further needs.

IMPLICATIONS FOR REHABILITATION

- Successful implementation of vocational rehabilitation services for people with multiple sclerosis within healthcare services requires multiple environmental and pragmatic changes.
- Healthcare professionals should record employment status from diagnosis to monitor changes in employment over the disease course, highlighting changes in working hours, occupation type, and employment rates.
- Vocational rehabilitation has the potential to improve the confidence of people with MS around symptom management and feeling supported and empowered at work.

ARTICLE HISTORY
Received 21 May 2024
Revised 7 October 2024
Accepted 8 October 2024

KEYWORDS
Vocational rehabilitation; multiple sclerosis; job retention; occupational therapy; national health service

Introduction

Multiple sclerosis (MS) is a chronic degenerative disease of the central nervous system, affecting 2.8 million people worldwide [1,2]. MS is associated with a variety of symptoms (e.g., physical, cognitive, psychological), and the clinical course of the disease fluctuates from relapsing to progressive MS [2,3]. The symptoms and unpredictability of the condition can lead to difficulties remaining at work [4–7]. There is extensive research understanding the barriers to job retention for people with MS [8,9]; overall, difficulties at work arise from difficulties managing symptoms (e.g., cognition, fatigue, mobility difficulties) and lack of support from their workplaces [6,10]. Disclosing the condition (i.e., telling your employer you have MS) can improve employment outcomes for people with MS [11], but people with illness and disabilities are not supported to do this adequately.

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Supplemental data for this article can be accessed online at https://doi.org/10.1080/09638288.2024.2417031.

Evidence suggests that the risk of unemployment or reducing working hours to part-time increases, even as soon as the person experiences their first demyelination episode [12]. Early diagnosis (between 20 and 40 years of age), long disease duration, and impact on employment lead to a high economic burden for individuals and society. In the United Kingdom (UK), for a person with moderate MS disability [Expanded Disability Status Scale (EDSS): 4–6.5], the costs associated with productivity loss (£10,284) exceed their healthcare costs (£5,511) [13].

Vocational rehabilitation (VR) aims to support people with illness or disability to remain at, return to or find new employment [14]. Unfortunately, evidence of these interventions' effectiveness is currently lacking [15]. As part of a previous research study, our team developed a job retention VR intervention (MSVR; multiple sclerosis vocational rehabilitation) following the person-based approach [16]. MSVR is underpinned by a biopsychosocial approach and work disability prevention theories to offer individually tailored support with employment to people with MS and their employers [16]. We tested MSVR in a community setting (i.e., outside of hospitals), delivered by an assistant psychologist, and the intervention was associated with improved vocational goal attainment at four time points, up to 12 months post-intervention [17]. The findings suggest VR could positively impact the employment rates of people with MS.

VR may fit better within health (i.e., in a hospital), at a time when people are diagnosed with MS and routinely screened for new symptoms and disease progression. Even though there is a recent push to offer support with employment through health services [18], in the UK, VR services are not routinely provided in healthcare settings (and elsewhere in the community), with few people having access to this support [19]. In the UK, there are no employer compensation schemes, and unless people draw on medical insurance policies, they may have limited access to support [20]. Therefore, people with illnesses or disabilities are usually referred to different healthcare professionals without addressing their vocational needs. Additionally, other services available, such as occupational health through an employee's organisation or private providers, are available to a minority of employees [21,22], with those working in smaller organisations without occupational health support not receiving any help.

Implementing VR within existing health services aligns with the UK National Health Service (NHS) long-term plan, highlighting the relevance of providing timely support to people who develop health conditions to optimise employment [23]. Indeed, understanding the context of intervention delivery is essential to exploring how VR works, as suggested by the Medical Research Council (MRC) framework for developing and evaluating complex interventions [24].

To understand how MSVR can be delivered in the NHS, our team explored the nuances of the healthcare context (i.e., NHS services) through a qualitative approach [19], and adapted MSVR for delivery in the neurology services of two NHS hospitals.

Aim

The primary aim was to explore the feasibility and acceptability of implementing a job retention VR intervention (MSVR) for people with MS in the UK NHS. Secondary aims were associated with exploring changes in outcomes of interest and identifying factors affecting intervention delivery.

Materials and methods

This was a multicentre, single-arm feasibility study with embedded post-intervention qualitative interviews. The intervention was delivered between December 2022 and November 2023, and interviews were conducted between March 2023 and February 2024. Quantitative and qualitative methods explored the feasibility of delivering MSVR in the NHS and the acceptability of receiving the support. Due to the highly individualised nature of MSVR, a mixed-methods approach was selected to explore participants' experiences in more detail and the impact of the intervention on their employment circumstances.

Ethical approval was obtained from the Faculty of Medicine & Health Sciences Research Ethics Committee (REC) at the University of Nottingham (reference: FMHS 477-0322) and NHS Ethical Approval from the Stanmore REC (reference: 22/PR/1030). All participants completed a written consent form before data collection.

Study population

Participants were recruited from two hospitals. Three participant groups (people with MS, their employers, and healthcare professionals) were recruited. Participants with MS were recruited through referral sampling. Once a healthcare professional from the hospital identified a person with MS meeting the inclusion criteria, they referred the participant to the study. The lead researcher (BDP) met the healthcare teams in person and remotely before the study to explain the purpose of the study and provided them with an advertisement poster including details of the inclusion criteria.

The inclusion criteria for all participants were: (1) age 18–65, (2) willing to give informed consent, (3) able to speak English. In addition, people with MS were needed to (1) have a diagnosis of MS, (2) be employed. People with MS already receiving VR were excluded. The inclusion criteria for the intervention were broad to allow those already experiencing challenges at work, but also those worried about their future at work and selected to support an "early intervention" approach to help people manage their MS at work before their difficulties became too complex to address.

Employers (e.g., line manager, human resources representative) were recruited through purposive sampling by asking the participants with MS if they were interested in including their employer in the intervention. Inclusion criteria for employers were (1) age 18–65 (2) willing to give informed consent, and (3) currently employing a person with MS.

Healthcare professionals were recruited through convenience sampling to explore implementation aspects of implementing MSVR within existing NHS services. Additional inclusion criteria were (1) currently involved in caring for people with MS. The Occupational Therapist (OT) delivering the intervention was also interviewed by an author not engaged in the training and mentoring of the OT (RL) to explore her experiences during the study and identify additional training needs.

Intervention

MSVR was an Occupational Therapist (OT) led intervention that involved exploring job retention needs and work aspirations followed by achievable vocational goal setting over three months. Up to 10 h of individually tailored VR addressed 14 components, including managing MS symptoms at work (e.g., fatigue, cognition, pain), identifying and implementing reasonable adjustments, and vocational exploration (i.e., search for alternative employment options). The TIDieR (template for intervention description and replication) Checklist was used to report the intervention description (Supplementary Appendix A) [25].

MS participants could also include their employer in the intervention to receive support from the OT. This involved exploring employees' MS knowledge and identifying areas of need to optimise their support for the employee. A detailed intervention description is presented elsewhere [17].

Training MSVR therapist

A Health & Care Professional Council registered OT delivered MSVR. She received training from an OT expert in VR (JAH) and a researcher with psychology experience (BDP) that included:

- MSVR intervention manual as pre-reading.
- Two-day personalised workshop (September 2022).
- Monthly online mentoring to discuss active cases and factors affecting intervention delivery and identify further training needs.

Training content included problems people with MS experience at work, description of intervention components, case examples, and practical exercises in completing research and intervention forms.

Data collection

Table 1 presents the data sources and methods used to ascertain the feasibility and acceptability of implementing MSVR in the UK NHS.

Feasibility of implementing MSVR

A screening and recruitment log was completed by the lead researcher, including information on participants contacted, recruitment rates, and reasons for non-participation (if provided). Using a proforma, the OT kept records of the number of sessions delivered, mode of delivery (i.e., in-person, via telephone, or videoconference), and the time (in minutes) spent on each component delivered per session (Supplementary Appendix B).

A mentoring record form was completed for each mentoring session, recording the topics discussed, issues with clinical practice, implementation, challenges faced by the OT, employer intervention, and "other" issues.

Quantitative measures

Participants with MS were sent an online questionnaire booklet at baseline, post-intervention, and at three months follow-up. MS participants completed Perceived Deficits Questionnaire (PDQ) [26], Work Productivity and Activity Impairment Questionnaire (WPAI:MS) [27], Hospital Anxiety and Depression Scale (HADS) [28], MS Work Instability Scale (MS-WIS) [29], Modified Fatigue Impact Scale (MSFIS-5) [30], ED-5D-5L (Euro-QOL) [31], Work self-efficacy scale (WSES) [32], and Workplace adjustments [33]. Further information about these scales can be seen in Table 2.

These measures were selected because they were brief, had previously been used in studies involving people with MS, and were seen as acceptable by PPI representatives.

Before intervention delivery, the OT completed a demographic questionnaire with all MS participants and used Goal Attainment Scaling (GAS) [34] to set participant goals for MS participants. The Expanded Disability Status Scale (EDSS) was included to measure physical disability [35].

Table 1. Summary of research questions and data sources.

Aim	Objective	Research question	Data source(s)
To determine the feasibility of implementing MSVR and measuring its effects in the NHS.	To explore the feasibility of recruiting an NHS OT to deliver MSVR.	Can we recruit an NHS occupational therapist to deliver MSVR? What are the challenges of delivering MSVR alongside NHS services?	• MSVR OT interview • Healthcare professional interviews
	To estimate the recruitment rate, the proportion of potentially eligible patients and identify reasons for non-recruitment. To determine the spectrum of MS severity among participants	Can NHS staff working with people with MS identify and refer eligible participants for MSVR? What are the characteristics of the participants recruited?	• Screening and recruitment log • Intervention records • MSVR OT interview • Healthcare professional interviews
	To determine the feasibility of measuring the effects of MSVR	How complete was the follow up data? What proportion of participants were lost to follow-up and what were the reasons? Were there any signals of efficacy on outcomes of interest?	• Questionnaire at baseline, end of intervention, and three months follow-up • MS participants' interviews • Employers' interviews
	To explore the feasibility of training and mentoring an NHS OT to deliver MSVR.	Can an NHS OT be trained and mentored to deliver MSVR? Was the training and mentoring sufficient and acceptable to the OT?	• MSVR OT interview • Mentoring record forms • MSVR OT interview • Mentoring record forms
	To determine participant compliance with MSVR and identify factors affecting compliance.	Did participants with MS adhere to the intervention? What factors influenced participant adherence? How many participants withdrew from the intervention and what were the reasons?	• Recruitment log • Intervention records • Mentoring record forms • MSVR OT interview • MS participants' interviews
To identify factors affecting intervention delivery.	To explore contextual and implementation factors affecting intervention delivery.	What factors affected MSVR delivery?	• Mentoring record forms. • Post-intervention interview MS participants, employers, and MSVR OT.
To explore acceptability of MSVR from the perspective of service users, service providers, and employers.	To explore participants' (MS and employers) views of the support received. To explore NHS healthcare professionals' perspectives of MSVR and of integrating MSVR in existing NHS services. To explore the views of the OT delivering the support.	Was the MSVR acceptable and useful to participants with MS and their employers? Was MSVR acceptable to the OT delivering the support? Was MSVR acceptable to healthcare professionals working in NHS services and what were their opinions on the feasibility of integrating MSVR within existing NHS services?	• Post-intervention interview MS participants, employers, MSVR OT, and healthcare professionals.

MS: multiple sclerosis; OT: occupational therapist; MSVR: multiple sclerosis vocational rehabilitation; NHS: National Health Service.

Table 2. Description of quantitative measures collected.

Measure	Domain assessed	Response options, items and reliability	Scoring and interpretation
Perceived Deficits Questionnaire (PDQ)	Perceived cognitive difficulties, including four sub-scales (attention/ concentration, planning/organisation, retrospective memory, and prospective memory).	This 5-point Likert scale questionnaire has 20 items and 0.93 Cronbach's alpha.	Higher scores are suggestive of more cognitive difficulties
Work Productivity and Activity Impairment Questionnaire (WPAI:MS)	Measures impairment due to health illnesses and their impact at work.	The questionnaire includes questions on working hours, hours missed due to MS and other factors, and two scales ranging from 0 (no impact) to 10 (unable to perform an activity) measuring how MS affects productivity in everyday activities and work.	Higher scores represent higher impact of MS at work and everyday life.
Hospital Anxiety and Depression Scale (HADS)	Measure of mood with two sub-scales (anxiety and depression)	Multiple choice scale, with 14 items. The mean Cronbach's alpha for the anxiety subscale is 0.83, and 0.82 for the depression subscale.	Higher scores represent higher anxiety and depression levels.
MS Work Instability Scale (MS-WIS)	Measures of work instability (the mismatch between functional ability and work duties in MS).	22-Item scale with binary answers (true/ not true) with a Cronbach's alpha value of 0.89.	Higher score represents increased work instability
Modified Fatigue Impact Scale (MSFIS-5)	Measure of fatigue	Five-item, five-point Likert scale ranging from 0 (never) to 4 (almost always). This scale has a good internal consistency of 0.80	Higher scores represent higher fatigue levels
ED-5D-5L (Euro-QOL)	This questionnaire assesses five dimensions on variables affecting quality of life (mobility, self-care, usual activities, pain/discomfort, and mood) and a health index	The five dimensions are assessed with a multiple choice (five answers), and the health index scores range from 0 (worst health you can imagine) to 100 (best health you can imagine).	Higher scores on the five domains represent lower quality of life. Higher health index score represents better health.
Work self-efficacy scale (WSES)	Measure of work self-efficacy (i.e., beliefs a person has about their ability to conduct their work duties).	This is a 10-item, has a factorial structure measuring "relational willingness" and "commitment" using a five-point Likert scale. Both factors have good internal consistency with a Cronbach's alpha of 0.85 and 0.82, respectively [32].	Lower scores represent lower work self-efficacy.
Workplace adjustments	Measure of reasonable adjustments provided by employer	Seven questions with binary answers (yes/no)	–

All other participants (employers, healthcare professionals, and OT) answered demographic questions.

Post-intervention interviews

All intervention participants and the OT were invited via email for an end of intervention interview. Semi-structured interviews with participants (people with MS, employers, and healthcare professionals) followed a phenomenological approach and were conducted via Microsoft Teams by BDP (who also recruited participants). The lead researcher was involved in recruitment but not intervention delivery. A second researcher (RL) with no previous involvement in the study interviewed the OT. No non-participants were present during the interviews; participants were only interviewed once, transcripts were not returned to the participants, and they were not asked for feedback following the analysis.

Interview topic guides (Supplementary Appendix C) were framed by research objectives, theoretical domains framework (TDF, [36]), and behaviour change wheel (BCW, [37]). A Patient and Public Involvement (PPI) representative (IN) reviewed the questions.

Participants were informed about the aim of the interview (i.e., to explore their experiences and informed refinement of the intervention). Qualitative findings are reported following the consolidated criteria for reporting qualitative research (COREQ) [38] (Supplementary Appendix D).

Data analysis

Quantitative data were analysed using percentages and descriptive statistics [mean, standard deviation (SD)]. To compare the performance of participants as a group at different time points (baseline, end-of-intervention, follow-up), we selected a paired *t*-test (for parametric data) to determine whether the mean difference between the scores at the different time points differs. This test was conducted using SPSS v 28.0 [39]. Data were presented regarding the mean, SD, associated *p* values, and effect size (Cohen's d).

Semi-structured interviews were audio and video-recorded and transcribed verbatim. BDP conducted the interviews and took notes during the interview. She has extensive qualitative research experience and only knew the participants from the consent-taking procedures.

Anonymised transcripts were analysed using NVivo [40] and Excel following the framework method [41]. The framework method involves five steps (familiarisation, identifying a thematic framework, indexing, charting the data, and mapping and interpretation) [41]. The interview data analysis involved three authors (RL, BDP, CS). Two researchers (RL, BDP) familiarised themselves with the transcripts by reading and listening to the audio recordings, developed a thematic framework based on TDF and BCW, and applied the interview transcripts to the framework categories (*indexing*). The authors (RL, BDP) explored relationships between the interview themes and summarised the information by charting the data in Excel; a third author (CS) reviewed the coding. Following this step, we mapped and interpreted the data to address the research questions. Any disagreements were discussed with a fourth researcher (KR). The characteristics of the team analysing the data are presented in Table 3

Data synthesis

Quantitative and qualitative data were analysed using the convergence matrix [42] to identify convergence (findings from both methodologies agree), complimentary (findings from one methodology complement or provide further insight into the findings of the other methodology), disagreement (findings from each method contradict each other), or silence (no data available from one methodology) between the quantitative and qualitative findings.

Table 3. Personal characteristics of researchers conducting interviews and data analysis.

	RL	CS	BDP
Credentials	BSc Psychology MSc Rehabilitation Psychology	Undergraduate student (Psychology)	BSc Psychology (Neuropsychology) MPhil Psychology PhD Clinical Psychology
Occupation	Research Assistant	Research Assistant	Research Fellow
Gender	Woman	Woman	Woman
Experience and training	Expertise in vocational rehabilitation and long-term neurological conditions.	Basic knowledge about vocational rehabilitation.	Extensive expertise in vocational rehabilitation and multiple sclerosis.

Table 4. Demographic and employment characteristics of participants with MS.

	$n=20$ (%)
Demographic	
Ethnicity	
White British	15 (75%)
White other	2 (10%)
Black British	2 (10%)
Asian British	1 (5%)
Education	
Other	1 (5%)
A-levels	3 (15%)
College	6 (30%)
Degree	4 (20%)
Postgraduate	6 (30%)
Relationship status	
In a relationship	11 (55%)
Single	6 (30%)
Divorced	2 (10%)
Not provided	1 (5%)
Type of MS	
Relapsing-remitting MS (RRMS)	14 (70%)
Secondary-progressive MS (SPMS)	5 (25%)
Primary-progressive MS (PPMS)	1 (5%)
EDSS (Expanded Disability Status Scale)	($n=11$)
Average EDSS	4.45 (2.33)
EDSS 0–3	4 (36.4%)
EDSS 4.5–6	5 (45.5%)
EDSS 6.5–9	2 (18.2%)
Employment	
Employer type	
Public	10 (50%)
Private	8 (40%)
Self-employed	2 (10%)
Organisation size[+]	
Small	4 (20%)
Medium	2 (10%)
Large	14 (70%)
Job category*	
Level 1 (Managers, Directors)	4 (20%)
Level 2 (Professional occupations)	2 (10%)
Level 3 (Technical occupations)	6 (30%)
Level 4 (Administrative and secretarial)	8 (40%)

[*] Office for National Statistics. Standard occupational classification (SOC); 2020.
[+] Organisation size obtained from UK Government guidelines.

Results

Twenty participants with MS, three employers, and three healthcare professionals were recruited.

Participant characteristics

Participants with MS

Participants were mostly women ($n=13$; 65%), working part-time 60% ($n=12$), and averaging 48.6 (7.4) years of age. Table 4 presents participants' demographic and employment characteristics.

Clinical characteristics. Participants had been living with MS on average for 10.8 (SD: 9.26) years and reported several MS symptoms affecting their performance at work (Figure 1), most commonly fatigue ($n=18$; 90%), memory ($n=13$; 65%), difficulty walking ($n=12$; 60%), and pain ($n=11$; 55%). Only 11 participants with MS had clinician-assessed EDSS scores, ranging from 0 (no disability) to 6.5 (severe disability), with an average EDSS of 4.45 (2.33).

Employers

Three line managers (two women and one man, all White British ethnicity) were recruited. All were working full-time; two for large public companies and one for a small private company.

Healthcare professionals

Three healthcare professionals (one specialist MS Nurse and two assistant Psychologists; all women of White British ethnicity) were recruited. All had postgraduate qualifications and at least three years' experience in MS.

MSVR OT

Woman, OT (BSc, MSc) with extensive community experience, some MS experience and limited VR expertise.

Feasibility results

Recruitment of staff and participants

OT recruitment. The research team approached three OTs known to the group in the two recruiting sites, but it was not feasible to recruit an OT from either. The OTs roles had been modified during the Covid-19 pandemic, and limited OT staff capacity in both sites made their participation unfeasible. The team recruited an OT from a different NHS Trust to deliver the intervention.

The OT recruited to deliver the intervention altered the structure of her work to better manage the commitments of intervention delivery. She dedicated 50% of her time to her pre-existing community OT role and the other half to MSVR delivery.

Recruitment of participants. Four professional groups supported recruiting participants: Neurologists, Assistant Psychologists, OTs, and MS Nurses.

We received 36 referrals to the study, of which 17 came from MS Nurses, 12 from Neurologists, six from assistant psychologists, and one referral from OTs. These professionals shared the information with BDP, who contacted the participants to address questions, complete the consent form, and share the baseline questionnaire. The OT was informed about participant recruitment after completing the baseline assessment.

It was feasible to recruit the target sample of participants with MS ($n=20$) through two NHS neurology clinics. However, fewer employers than anticipated were recruited (3 out of 10). No information was collected on how many people with MS were informed about the intervention but refused the referral to the study. Only one participant who did not meet the inclusion criteria was referred to the study.

Sixteen people with MS were not recruited because they (i) did not respond to recruitment emails ($n=8$; 53.3%), (ii) had limited availability to participate ($n=2$; 13.3%), (iii) showed interest in participating but recruitment had closed ($n=5$; 33.3%), (iv) did not meet the inclusion criteria (i.e., had clinically isolated syndrome but no official MS diagnosis) ($n=1$; 6.65%).

Seven (35%) participants with MS consented to include their line managers in the study. All were approached, but only three

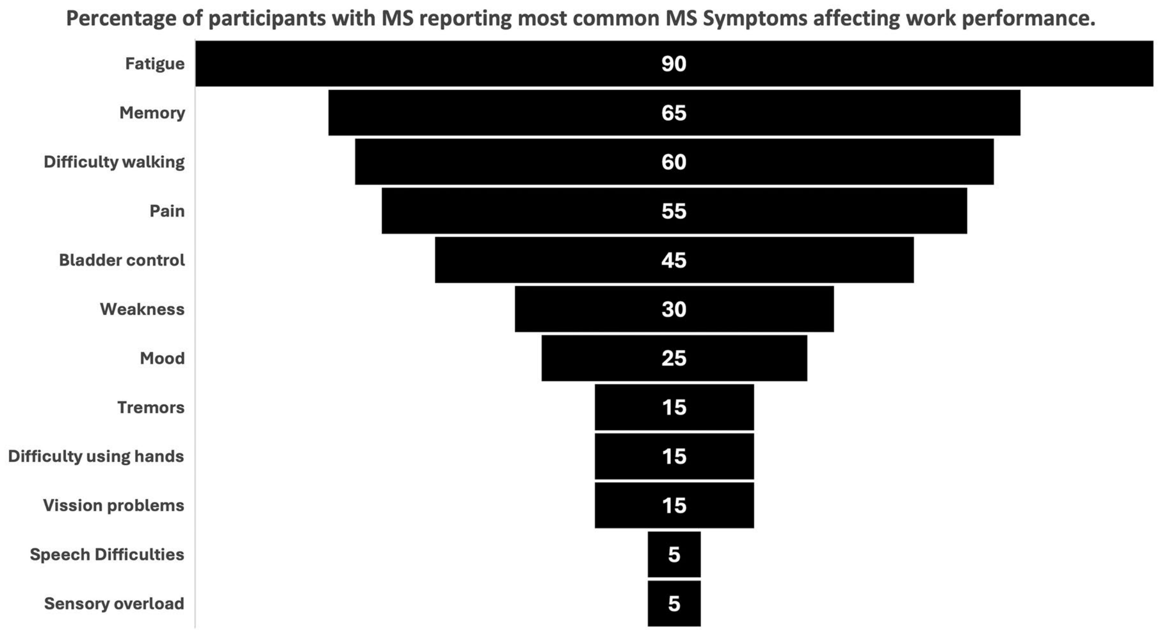

Figure 1. Most common MS symptoms reported to affect work performance

employers consented to participate. Reasons for non-participation were being too busy (*n* = 2; 50%), off sick (*n* = 1; 25%), and not being allowed to participate for legal reasons by human resources (*n* = 1; 25%).

Completion of questionnaires

One participant with MS (*n* = 1; 5%) dropped out of the intervention after the initial assessment because they had started a new job and had limited time to engage with MSVR. All participants with MS who completed the intervention (*n* = 19; 95%) also completed the follow-up data collection at all points in time in full. However, three participants could not complete the end-of-intervention interview because they were busy. All employers (*n* = 3) conducted the end-of-intervention interview.

Training & mentoring OT

The OT completed the two-day training and attended all mentoring sessions as planned. One mentoring session had to be rescheduled due to a conflict with external NHS training. It was initially intended that the OT received one hour of mentoring per month (up to 11 h); however, some sessions lasted longer than expected due to having multiple topics to address in the session.

During the study, the OT requested and received an additional 9 h of support over the 11-month intervention delivery period (further information in Supplementary Appendix E). This included support with goal setting, following research procedures (e.g., how to complete forms and report intervention content), and using technology (i.e., support using Microsoft Teams).

Participant compliance and factors affecting MSVR delivery

All participants with MS (*n* = 20; 100%) commenced the intervention, and 19 (95%) completed it as intended. The intervention commenced with a mean of 27.6 (19.4) days following recruitment. Only six (30%) participants with MS commenced the intervention within the predefined timeline (10 days). The reasons for the delayed start were: (i) participant on annual leave (*n* = 4; 20%), (ii) participant missed or did not respond to emails (*n* = 4; 20%), (iii) participant re-schedule first session several times (*n* = 2; 10%), (iv) OT on annual leave (*n* = 2; 10%), and (v) health or family issues (*n* = 2; 10%).

There was an agreed end of intervention for 17 participants. One person dropped out because of starting a new job and having less time for the study, and two whom the OT believed needed additional support, did not book further sessions.

MS participants received, a mean of 5.3 (2.5) hours of support during the three-month intervention. In total, 82 sessions were delivered, averaging 4.1 (2.2; range 1–9) sessions per participant. Sixty (73.2%) sessions were delivered via Microsoft Teams, 21 (25.6%) by telephone and one face-to-face (1.2%).

The OT spent most time delivering support in components such as discussing reasonable adjustments (19.2%), fatigue management (15.1%), support with mood difficulties (9%), review of progress made (8.9%), and managing cognition at work (8.5%).

Regarding factors influencing participant adherence, 34 MSVR sessions had to be rescheduled because participants forgot about the session (*n* = 11; 32%), other healthcare appointments (*n* = 4; 12%), family needs (*n* = 3; 9%), technical problems (*n* = 2; 6%), OT cancelled the session (*n* = 2; 6%), participant's annual leave (*n* = 2; 6%), participant feeling unwell (*n* = 2; 6%), traffic issues (*n* = 1; 3%) and unexpected work meeting (*n* = 1; 3%). The reasons for rescheduling the appointment were not provided for six (17%) sessions.

All employers (*n* = 3; 100%) completed the initial assessment and intervention as intended, receiving 1.6 (0.9) hours of support. The initial assessment lasted, on average, 20 (1.2) minutes. Two employers completed two further sessions, and one employer completed one further session.

MS participants reported continuing to receive NHS services during the intervention timeline, and no participant received additional (NHS or private) VR support for the duration of the study.

Efficacy results

At the end of the intervention, all participants remained in work. At the three-month follow-up, one participant had taken early retirement; this decision was made during the intervention. There were no major changes in the reasonable adjustments received by the participants. Six participants reported receiving reasonable adjustments at work, two provided incongruent responses (e.g., mismatch between answers to the questionnaire and support reported during the intervention), and twelve reported no formal changes in the support received at work.

There was a statistically significant improvement in goal attainment at the end-of-intervention ($t(18)=7.41$, $p=<0.001$) and at follow-up ($t(17)=6.01$, $p=<0.001$) (Table 5). There was also a small but not statistically significant improvement ($p=0.059$) in the EQ-5D-5L visual analogue scale (Table 5). There were no changes in the rest of the measures collected (PDQ, MS-WIS, HADS, MIFS-5, and WES).

Acceptability of MSVR

Interviews lasted between 15 and 60 min. Three participants did not complete the end-of-intervention interview due to their limited availability. Interviews identified factors contributing to the acceptability of MSVR and barriers to delivering it in the NHS. The demographic, employment, and clinical information on the participants with MS, and employers and healthcare professionals who completed the post-intervention interview are presented on Tables 6 and 7 respectively. Key themes were the impact of intervention at work, accessibility of support, the role of the OT, readiness for support, supportiveness of the workplace, and barriers to NHS delivery.

Theme 1: Impact of intervention at work

Interview participants suggested that the intervention had an overall positive impact at work, reiterated by both MS participants and the OT who delivered it.

> I can't actually say how valuable that this has actually been […] I do have to look at what support I can get. So, it's been a wake-up call for me. So, it's been absolutely invaluable for that reason. (Participant with MS; public organisation; ID_15)

Key areas where the intervention had a positive impact were being a source of knowledge for patients, their employers, and,

Table 5. Paired *T*-test results.

	Average score			Paired *T*-test	
				End-of-intervention vs. baseline	Three months follow-up vs. baseline
	Baseline ($n=20$)	End of intervention ($n=19$)	Three months follow-up ($n=19$)	Mean change (SD, 95% CI), *p; (d)*	Mean change (SD, 95% CI), *p; (d)*
PDQ – total	38.5	35.05	35.52	−1.78 (9.91, −6.56 to 2.98), $p=0.442$; ($d=0.20$)	−1.31 (9.91, −5.61 to 2.98), $p=0.528$; ($d=0.17$)
PDQ – attention	10.11	9.68	9.73	−0.10 (1.91, −1.02 to 0.81), $p=0.813$; ($d=0.10$)	−0.05 (2.17, −1.09 to 0.99), $p=0.917$; ($d=0.08$)
PDQ – planning	9.55	8.78	8.42	−0.31 (3.26, −1.89 to 1.25), $p=0.678$; ($d=0.16$)	−0.68 (3.03, −2.14 to 0.77), $p=0.339$; ($d=0.23$)
PDQ – retrospective memory	10.38	8.89	9.47	−0.36 (2.54, −1.59 to 0.85), $p=0.536$; ($d=0.34$)	−0.42 (2.65, −1.69 to 0.85), $p=0.498$; ($d=0.20$)
PDQ – prospective memory	8.44	7.68	7.89	−1.0 (3.41, −2,46 to 0.64), $p=0.218$; ($d=0.16$)	−0.15 (2.89, −1.55 to 1.23), $p=0.815$; ($d=0.12$)
MS-WIS	15.50	15.89	15.47	.42 (2.19, −0.63 to 1.47), $p=0.414$; ($d=0.09$)	0.00 (3.26, −1.57 to 1.57), $p=1.00$; ($d=0.01$)
HADS total	17.27	16.21	17.10	−0.47 (6.23, −3.48 to 2.53), $p=0.745$; ($d=0.14$)	0.42 (6.39, −2.66 to 3.50), $p=0.777$; ($d=0.02$)
HADS anxiety	8.50	9.31	9.26	.47 (3.79, −1.35 to 2.30), $p=0.593$; ($d=0.19$)	0.42 (3.87, −1.44 to 2.28), $p=0.642$; ($d=-0.18$)
HADS depression	8.77	8.05	7.84	−0.73 (3.57, −2.45 to .98), $p=0.380$; ($d=0.16$)	−0.94 (2,97, −2.37 to 0.48), $p=0.182$; ($d=0.23$)
MIFS-5	12.00	11.94	11.25	−0.05 (3.89, −1.82 to 1.92), $p=0.953$; ($d=0.01$)	−0.05 (2.77, −1.39 to 1.28), $p=0.935$; ($d=0.17$)
WSES$^+$	37.10	37.42	35.68	0.31 (7.46, −3.28 to 3.91), $p=0.856$; ($d=.09$)	−1.42 (7.26, −4.92 to 2.08), $p=0.405$; ($d=0.13$)
EQ-5D-5L$^+$	0.68	0.65	0.63	−0.02 (0.17, −0.11 to 0.05), $p=0.463$; ($d=0.14$)	−0.04 (.15, −0.11 to 0.03), $p=0.224$; ($d=0.21$)
EQ-5D-5L VAS$^+$	54.33	61.78	60.68	7.68 (16.60, −0.31 to 15.68), $p=0.059$; ($d=0.39$)	6.57 (17.79, −1.75 to 14.91), $p=0.115$; ($d=0.37$)
Goal Attainment Scale$^+$	41.18	57.16	53.71	15.86 (9.33, 2.14 to 11.37), ***p*=<0.001***; ($d=2.47$)	12.41 (11.06, 7.08 to 17.74), ***p*=<0.001***; ($d=1.63$)

PDQ: Perceived deficit questionnaire; MS-WIS: Multiple Sclerosis Work Instability Scale; HADS: Hospital Anxiety and Depression Scale; MFIS-5: Modified Fatigue Impact Scale-5 items; WSES: Work Self-efficacy Scale; EQ-5D-5L: EuroQol 5-dimensions, 5 levels, VAS: Visual Analogue Scale; SD: standard deviation; FU: follow-up; +Measures where a higher score represents a positive outcome.

[*] Statistically significant change.

Table 6. Demographic characteristics of MS participants completing post-intervention interviews.

Gender	Age	Ethnicity	Education	Type of MS	Years with MS	Employment	Type of employer	Size of employer
Man	60	Black	Post-graduate	SPMS	6	Full-time	Public	Large
Man	48	White British	Degree	RRMS	12	Full-time	Private	Large
Woman	50	White British	College	RRMS	7	Full-time	Private	Small
Woman	56	White British	Degree	RRMS	31	Part-time	Private	Small
Woman	57	White British	Degree	RRMS	5	Part-time	Private	Medium
Woman	55	White British	College	SPMS	19	Part-time	Public	Large
Woman	49	White British	A-Levels	RRMS	7	Part-time	Public	Large
Woman	34	White British	College	SPMS	18	Part-time	Public	Large
Woman	47	White British	Post-graduate	RRMS	3	Part-time	Self-employed	Small
Man	54	Other White	Post-graduate	RRMS	2	Part-time	Self-employed	Small
Woman	35	White British	A-Levels	RRMS	3	Part-time	Private	Large
Woman	59	White British	Degree	SPMS	21	Full-time	Public	Large
Woman	47	White British	Other	RRMS	3	Full-time	Public	Large
Woman	43	Other White	A-Levels	RRMS	2	Part-time	Public	Large
Woman	53	White British	Post-graduate	RRMS	14	Full-time	Public	Medium
Man	46	White British	Post-graduate	SPMS	29	Part-time	Public	Large
Man	53	White British	College	PPMS	3.5	Part-time	Private	Large

MS: multiple sclerosis; SP: secondary-progressive; PP: primary progressive; size of employer: large (>250 employees), medium (50–249 employees), small (10–49 employees).

Table 7. Demographic characteristics of employers and healthcare professionals completing post-intervention interviews.

Study ID	Gender	Ethnicity	Education	Role	Employment	Type of employer	Size of employer	Years of experience working with MS
EMP_01	Man	White British	College	Line manager	Full-time	Private	Small	3 Months
EMP_02	Woman	White British	Degree	Line manager	Full-time	Public	Large	15
EMP_03	Woman	White British	Post-graduate	Line manager	Full-time	Public	Large	7
HCP_01	Woman	White British	Post-graduate	Assistant Psychologist	Full-time	Public	Large	3
HCP_02	Woman	White British	Post-graduate	MS Nurse	Full-time	Public	Large	7
HCP_03	Man	White British	Post-graduate	Assistant Psychologist	Full-time	Public	Large	3
MSVR_OT	Woman	White British	Post-graduate	Occupational Therapist	Full-time	Private	Large	4

MS: multiple sclerosis; EMP: employer; HCP: healthcare professional; OT: occupational therapist; MSVR: multiple sclerosis vocational rehabilitation.

in some cases, their colleagues. The information provided was work- and MS-specific and individualised to the patient's needs. Information was delivered in a helpful handout format that could be saved for future use and shared with the company.

> At the moment, they've got some literature that they can share with the rest of the business […] Previously, we haven't got anything. So, it would have been very much a search the Internet, see what we can find out on how to support managers and employees (Employer public organisation; ID_02)

The intervention helped participants achieve their intervention goals, with all participants reporting to have achieved at least one goal. When goals were not met, this was due to external factors out of the patient's and therapists' control (e.g., time taken for applications to complete or for workplaces to implement modifications).

> I feel like [I met the goal] more than expected because I have subsequently [.] I've applied for other jobs I've felt comfortable increasing my hours in my self-employed work (Participant with MS self-employed; ID_10)

The intervention helped participants with MS build confidence to manage their symptoms and their workplace issues. Employers also felt that it increased the confidence of participants with MS at work.

> The confidence to talk about other possibilities and feel as though it's something that we can work on together rather than it's me asking for a favour or it being any kind of weakness to say could we try this? So, it makes me feel much more like a member of staff asking for something as opposed to someone with a disability saying, "Please, can I have this? I really need this," […] from that point of view, it's nice to have the extra confidence to do that. (Participant with MS; public organisation; ID_17)

Overall, the intervention made participants with MS feel supported by their workplace. By engaging with the intervention, employers felt their employees would feel better supported as their managers were more aware of MS and its impact on work. Workplaces showed they were supporting their employees by learning about MS and implementing workplace adaptations, modifications, and reasonable adjustments.

> It does help to have the employer that understands what is going on as well as the employee because it does mean you can offer a lot more support. (Employer public organisation; ID_02)

Theme 2: Accessibility of support

Participants with MS had never received this sort of support before. They valued being able to access it and hoped that it would become available within NHS services. They reported how traditional health services did not have enough time to discuss their work issues in such detail. Employers echoed this, as they had previously been excluded from discussions about their employees' health because this was between the employee and occupational health.

Participants suggested different organisations supporting people with MS at work should be aware of this sort of support. These included occupational health, human resources, MS charities and MS online support groups.

> I feel like in the ideal world, it would have fit within the NHS. But I think from a financial point of view, it has to be funded by a charity; if it's a proper kind of management programme with the MS Society or whatever, and people can get signposted/referred, then I'm sure it would get a lot of if the people need it then people would go to it. (Healthcare professional; public organisation; ID_01)

The remote delivery of the intervention reduced participant burden. The therapist also offered flexibility in booking the sessions (e.g., different days and times); participants could schedule sessions around their work, have time to think about their discussion with the OT, and return to her if they had forgotten something in the previous sessions. Patients felt this was better than the usual care provided by the NHS.

> Having that kind of contact with someone that is speaking to you, actually I think, gives you more confidence and makes you feel that there is more of a connection with treatment with your illness… rather than waiting to see the MS nurses and when you do see the MS nurses is very quick thing really. (Participant with MS; public organisation; ID_01)

Theme 3: Role of MSVR OT

Intervention participants (MS and employers) thought the OT provided a great service. Key OT attributes included being supportive, easy to talk to, knowledgeable, and empathetic. This helped participants feel comfortable sharing their employment issues without worry of discrimination.

> I felt comfortable with her, and I trusted her […] had it been somebody else, I don't know where it would have gone, but I felt comfortable with [OT] and I trusted her. (Participant with MS; private organisation; ID_06)

Theme 4: Readiness for support

Participants with MS and healthcare professionals believed that the timing of the intervention was essential to its success. Offering support soon after diagnosis can be overwhelming but leaving it too late after diagnosis can lead to disengagement with the intervention. Healthcare professionals reported that people with MS experiencing cognitive issues were more likely to be experiencing workplace issues and want to participate in the study.

> I found a lot of people, if they did have cognitive problems, the main thing that was being impacted was their work. I think people seemed quite keen and wanted to take part and seemed quite eager (Healthcare professional; public organisation; ID_01)

The OT reported that she perceived some gender differences between participants. The OT explained that some participants with MS reported women had more difficulty balancing work and home lives than men. Male participants also reported finding it harder to discuss personal issues with the OT and needing time to build rapport before opening up.

> I noticed actually that the women often said I enjoy being at work, but getting to work is so much hard work because I've got to get the kids up, make their packed lunches, get them to school, get myself up, get myself dressed and ready for work and all of those things mean I'm exhausted by the time they get to work. If I didn't have to do that, work would be much easier. None of the men mentioned that once because I suspect they don't do that […] so that that was an interesting observation because the men didn't ask about things related to home, but the women did. (MSVR_OT)

Some participants also reported that they lacked the confidence to advocate for themselves and did not want to bother their employer or felt undeserving of support.

> I always try and not cause people problems and not come across needy […] I don't want to be a problem and say well I think I need this. (Participant with MS; public organisation; ID_08)

Theme 5: Supportiveness of the workplace

Whether participants with MS worked in a supportive workplace or not impacted intervention effectiveness. Supportive workplaces engaged with the intervention or read the information that their employees with MS shared with them. Employers who engaged in the intervention did so because they believed that supporting an employee would make the employee feel more valued as a team member.

> I was pleased that [employee MS_04]] came because you know, it made it person-centred right from the beginning [.] if I've got someone, you know, within these grounds now that isn't being supported, I would be mortified […] it comes down to the culture, it comes from the top, and it transmits down, doesn't it. And I think if people feel valued and the feel supported, then they'll go the extra mile for you as well. (Employer private organisation; ID_01)

If the workplace was unsupportive, then it was challenging to implement workplace adjustments. Some participants felt that this impacted intervention effectiveness.

> I've put I don't want the work to be contacted [.] the other day [.]I went upstairs. I was upset and my manager said "well at the end of the day you know, we've always said if you don't like it or whatever, just find another job" […] It's not very nice. (Participant with MS; private organisation; ID_05)

The OT felt those who did not want their employer involved were worried about their employer knowing about their work difficulties and the discrimination this may cause. The healthcare professionals also felt that people who were worried about this did not want to be part of the study.

Theme 6: Barriers to NHS implementation

The healthcare professionals and OT felt the intervention was compatible with NHS's care and wanted to see it delivered by the NHS, but how it would be funded and where it would sit in the NHS needed to be considered. They suggested that charities such as the MS Society could provide it if the NHS did not support it.

The healthcare professionals suggested the intervention would fit best within the MS multidisciplinary team (MDT), with patients being approached by the MS nurses because they build good relationships with their patients and might know if they are experiencing issues at work.

> In the ideal world, it would fit within the NHS MDT, and like I say, hopefully, nurses could facilitate, and if there's that information, in an ideal world, that maybe be a psychologist within the MDT within the MS team. But obviously, I know that's not always feasible from a money point of view, so that would make me lean towards private or charity. (Healthcare professional; public organisation; ID_01)

The OT felt she could manage her research time with her usual NHS role but faced challenges when working between the two roles. These included differences in practice in note writing, focus on "work" rather than looking at the patient holistically, goal setting, and staying in touch with patients.

> I really struggled with that [focusing on employment], and I knew what [BDP] needed me to concentrate on those very much in the workplace things. But I couldn't untangle [work and life] that very well, and I think a lot of OTs would struggle to untangle that as well. (MSVR_OT)

Data synthesis

Table 8 presents the results from the convergence matrix analysis. There was only one area of convergence (fatigue), where there were no changes in the quantitative measures, and participants reported still finding it difficult to manage fatigue at work. Four areas of complementary information on cognition, vocational goals, mood, and readiness for support were present. The interviews provided more detailed information on the factors that led to changes (or lack thereof) in these areas. For example, participants reflected on the impact of external variables such as the timeline of applications or not having the opportunity to speak with their manager as factors that affected whether or not they achieved change in some areas. Interestingly, participants with MS continued to experience difficulties managing cognition at work; however, they had learned some techniques to manage their difficulties in the workplace, but these changes were not large enough to be captured by standardised questionnaires.

Other measures, such as confidence, workplace support, and employer self-efficacy, were not measured quantitatively but were identified in the interview analysis. These variables reflect important aspects of their experiences that were influenced by the intervention but not measured using questionnaires.

Overall, the findings were aligned, and the qualitative data provided a more nuanced understanding of the impact of the MSVR intervention.

Discussion

Several challenges affected the feasibility of implementing MSVR within the NHS. Participants with MS and their employers found the support acceptable and beneficial. The intervention had a positive impact, supporting participants with MS in meeting their vocational goals. This study adds to the literature on VR for people with MS and common barriers to delivering VR to people with MS and implementing VR within healthcare services.

Recruiting an OT to deliver the intervention from the NHS recruiting sites was not feasible. Post-Covid-19 therapy staffing issues and service re-structure hampered the recruitment of staff suitable to deliver MSVR. There were also several issues associated with recruiting participants with MS through the NHS. Most participants were recruited in one site, where the lead researcher was based and had existing connections with clinical teams in that site. Recruitment in this site was also enhanced because it hosted another trial, screening for cognitive difficulties in people with MS (NEuRoMS; [43]). Potential participants screened but ineligible for NeuRoMs and who reported employment difficulties

Table 8. Convergence matrix results.

	Quantitative	Qualitative	Convergence
Fatigue	There were no changes in the MFIS-5 measure.	Participants reported still feeling fatigued at work and women had difficulties managing home and work responsibilities. Some participants reported learning what factors worsen their fatigue.	Convergence
Cognition	There were no changes in the PDQ measure.	Participants did not report any changes to their cognitive abilities. Some participants learned to use tools to manage their cognitive difficulties and learn what factors impacted their cognitive ability.	Complementary
Vocational goals	There was a statistically significant improvement in the goal attainment scale. All participants except for one met at least one goal at the end of the intervention.	The intervention helped participants meet their goals. When goals were not met or met "as expected" this was due to the intervention length or their goal requiring more time, rather than the intervention not being beneficial.	Complementary
Mood	There were no changes in mood. Participants scored between moderate to high levels of anxiety and depression.	Several participants reported feeling anxious or depressed about their employment circumstances and their future at work. Participants were informed about mental health services to request additional support.	Complementary
Readiness for support	Four participants completed between 1 and 2 sessions, and were reluctant to discuss their employment situation, even though they were experiencing problems.	Participants reported that it was challenging to discuss some of their employment concerns. One participant reported having difficulty opening-up in the intervention, and by the time they were ready to receive support the intervention was due to end.	Complementary
Confidence	No measure recorded this variable.	Participants reported feeling more confident in their ability to request support and express their needs at work. Participants were also more confident in their ability to self-manage symptoms.	Silence
Workplace support	No measure recorded this variable.	Participants with an employer involved in the intervention, reported feeling better supported at work because their employer was more aware of their circumstances. The intervention created an opportunity to have a conversation about how MS and work interact, and can impact on the well-being and productivity of the person with MS.	Silence
Employer self-efficacy	No measure recorded this variable.	Employers reported that the OT was a source of information, and provided them with relevant information and answered the questions they had about the employee with MS. This information was sometimes shared with other members of the organisation to improve their understanding of MS.	Silence

were informed about this study. This demonstrates the need for employment support for people with MS and the lack of existing screening to identify those with employment needs in existing NHS services. It also highlights the need for investment in research infrastructure, including staff trained to screen and recruit for rehabilitation studies, which are not adopted.

Informal communications with the second site identified that the clinical team were unsure about the remit of the intervention compared to their service, and not all staff were aware of the intervention, leading to only one participant being recruited. Thus, developing collaborative networks and communicating frequently with clinical teams could improve recruitment rates and allay concerns about the nature of the intervention. Clinical gatekeeping (i.e., when healthcare professionals are the main recruitment point to access participants) poses a significant barrier to recruitment in rehabilitation trials and may present a barrier to recruitment in rehabilitation trials [44] and may present a barrier to implementing MSVR more widely within NHS services. Further research is needed to better understand these issues before a future trial.

Fifteen people were contacted about the study but did not consent to participate. The reasons for not participating should be considered in future studies. Recruitment challenges are common in research, particularly for RCTs, and sometimes result in costly extensions due to low recruitment rates [45]. There is a need to explore recruitment approaches to reduce recruitment time and improve communication with potential participants to ensure they have the knowledge and support required to decide about their involvement [46].

Employer engagement is essential to job retention because employers are key to reasonable adjustments [47,48]. Evidence from VR for stroke survivors has shown that engaging employers and co-workers in the rehabilitation process to improve their awareness about the health condition can improve return to work rates [49]. This might be because employers often report a lack of knowledge and skills about identifying and implementing reasonable adjustments to enable a person with a long-term health condition to remain or return to work [50,51]. Unfortunately, only three employers were recruited. Similar employer rates were recruited in our previous study [17]. In this study, even though there were no major differences in terms of reasonable adjustments received, participants with MS reported a benefit on the employer learning more about MS and the implications on how the employer treated the employee with MS. Participants with MS reported that once they engaged in the intervention and learned about VR, they would have liked to reconsider their decision to exclude their employer. Therefore, allowing participants to include employers at different intervention time points could benefit future studies.

Participants with MS received fewer hours of support than in our previous study, where MSVR was delivered in a community setting [17]. This discrepancy may be because the previous study occurred during the COVID-19 pandemic when people were primarily working from home, and it may have been easier for them to integrate the intervention within their working schedule. The different recruitment methods may have also led to recruiting different populations with different clinical needs. Additionally, the OT delivering the intervention in this study had additional clinical responsibilities, which may have resulted in less time to deliver the intervention than the assistant psychologist delivering the intervention in the original study.

There were also differences in the intervention content, with less time spent managing cognitive difficulties than in our previous study [17]. This difference may have been caused by challenges identifying cognitive difficulties or having limited confidence in offering support on this topic.

The OT also needed more support than initially anticipated. The OT initially felt more confident offering support around activities of daily living than support with employment. She required more support in areas beyond their clinical competencies, such as completing research forms or using technology to deliver the intervention (i.e., Microsoft Teams). These findings are consistent with our research in training OTs to deliver VR interventions to people with Traumatic brain injury [52] and stroke [53]. Future research should explore the essential competencies needed to deliver VR beyond the clinical skills to ensure that healthcare professionals delivering these interventions are adequately supported. Despite the challenges, mentoring seems to be a suitable safety net to identify and address challenges promptly. This facilitated and improved the data collection and delivery of the intervention with fidelity. Evidence supports that mentoring clinical OTs in delivering research is associated with improved confidence and intervention fidelity [54,55].

Regarding the effectiveness of the intervention, goal attainment was the only measure with a statistically significant difference at post-intervention and three-month follow-up, consistent with our previous study. Using goal attainment in rehabilitation facilitates tailoring the intervention to the patient's needs because the intervention focuses on the patient's goals. This measure allows change to be captured in a highly individualised intervention, where challenges are associated with selecting outcome measures common to all participants. However, the skills of the professional setting the goals can result in discrepancies in how ambitious the goals are [56], leading to an improvement or worsening during the study that is not standard across participants. This was not an issue in this study (with only one OT) but might be an issue in larger studies with several therapists.

During the post-intervention interviews, participants reported an overall positive experience. They valued the support they received, suggesting all people with MS in the NHS should receive this type of employment advice. However, communication between the OT and the participants was potentially challenging. Some participants reflected that they would have liked additional support but were reluctant to request this due to their concern about asking for more than they deserved. Participants were sometimes unsure about what else the intervention could offer and suggested the OT could have mentioned further support ideas. This suggests the need for VR professionals to monitor the needs of those receiving VR in more detail to guide them during the intervention.

Finally, post-intervention interviews highlighted outcomes mentioned as relevant by the participants with MS, but these were not measured quantitatively. For example, the OT was seen as a reliable source of information. Participants also reported improved confidence in managing symptoms, feeling supported in the workplace, and feeling empowered. Employer self-efficacy was also not measured, which might have improved due to the information received by employers. Future studies should consider including measures of these outcomes in future trials to identify the impact of VR beyond clinical or symptomatic aspects of MS. Future research is also needed to understand the outcomes that are relevant to both people with MS and their employers to be measured in a future trial.

Strengths and limitations

A key strength of this study is the extensive support provided to the OT delivering the intervention to ensure they were upskilled to support people with MS at work. Because only one OT delivered the intervention, the mentoring sessions were tailored to their needs. BDP actively reviewed the intervention record forms to ensure consistency and identify errors in the coding of the intervention delivery to rectify these as the study progressed, leading to improved accuracy in the data collection.

A limitation of the study is the small sample size and the lack of a comparison group that would have benefitted the understanding of the follow-up measures. A key limitation was the lack of information on the number of eligible people for the intervention who rejected the consent to participate, their characteristics (e.g., type of employment, demographic characteristics), and reasons why they did not want to participate. This would have offered valuable insight regarding barriers to participation (e.g., higher anxiety levels, working full-time, etc.). A formal screening log will be necessary for a future RCT to record information about the proportion of eligible participants, participants referred, and participants rejecting the support. A final limitation refers to the lack of information on treatments and number of attacks that each participant with MS had.

Conclusion

This study identified several challenges associated with implementing VR for people with MS within the NHS. There is a need to restructure services to allow the identification of those employed and in need of support, and healthcare professionals need further training to address employment issues. Overall, VR for people with MS, their employers, and NHS professionals delivering the support seems acceptable to receive and deliver and can help people with MS meet their vocational goals.

Acknowledgements

We thank the participants for their dedication and time involved in the research.

Disclosure statement

Author JAH received consultative fees from the research funds to mentor the OT. Author BDP has received funding from the Neurology Academy (speakers bureau) to deliver a lecture on vocational rehabilitation for people with MS. Author RdN has received funding (speakers bureau) from Novartis, Biogen, and Merck for delivering lectures on psychological aspects of MS and cognitive screening and rehabilitation in MS.

JAH received the consultancy fees from the UK MS Society grant.

RdN and BDP received consultancy fees for separate research on a related topic.

Funding

This research was funded by the UK MS Society [Grant Ref: 140]. This work was also supported by Royal college of Occupational Therapists; Multiple Sclerosis Society – UK. TE received the Constance Owens Early Researcher Award as part of the Royal College Occupational Therapists (RCOT) Annual Award for Learning and Development.

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