

Background

Hyperbaric Oxygen Therapy (HBOT), is a medical treatment involving inhalation of pressurised oxygen in a chamber. HBOT is proposed to promote higher oxygenation levels in the lungs and hence the blood, compared to obtainable conditions at standard barometric pressure¹.

There is ongoing debate regarding the effectiveness of HBOT for people with MS (pwMS)^{2,3}. Although evidence is inconclusive and often contradictory it has been reported that HBOT may provide neuroprotective advantages by diminishing oxidative stress and maintaining nerve function in people with MS, potentially decelerating the advancement of the disease.

HBOT requires specialised equipment and staffing and can therefore be very expensive. With limited clinical evidence to support its benefits HBOT is not available within the NHS however many MS Therapy Centres around the UK have HBOT chambers which are well used by people with MS.

The aim of the study was to better understand the experience of pwMS who have received HBOT.

Methods

A 28 question electronic survey was developed using Microsoft Forms. The survey consisted of five sections: 1) Demographics: Age, sex, and ethnicity. 2) Clinical Information: Type of MS, time since diagnosis, Patient Determined Disease Steps (measure of disability) 3) Details of HBOT: Frequency, duration, cost and location (e.g. MS therapy centre, private practise) of HBOT sessions, and whether treatment was ongoing or not 4) Perceived Outcome: rating changes in 16 MS symptoms (e.g., fatigue, mobility, bladder control) in terms of 'changed, unchanged, and worsened' and any side effects 5) Participants' experience of HBOT: Reason for choosing HBOT, activities done during the session, reasons for stopping (if relevant).

Following ethical approval from Glasgow Caledonian University (Ref: AHP/024/045) the link to the survey was shared via Facebook and LinkedIn, targeting relevant support groups, MS Therapy Centres and pwMS.

Inclusion criteria: diagnosed with MS (self-reported) and have undertaken at least one session of HBOT in a UK-based facility.



Results

Of the 125 respondents, 96 (76%) were female, 29 (23.2%) and 1 preferred not to say. Most respondents were aged between 55-64years (40%), and 45-54 years (23.8%) and the vast majority were White- British (90.4%). Over 40% of respondents had had MS for more than 20 years. 45.7% had RRMS, 22.2% PPMS, 27.2% SPMS and 4.9% didn't know.

Results (cont)

99 (79.2%) respondents were receiving HBOT, the majority 112 (89.6%) received HBOT at an MS therapy centre, 5 (4.0%) at a private clinic, and 8 (6.4%) in other places like charitable trusts

Most participants (81.6%) received HBOT once per week, 16% received twice per week and 4% three of more times per week with participants mostly paying £10- £20 per session (46.4%).

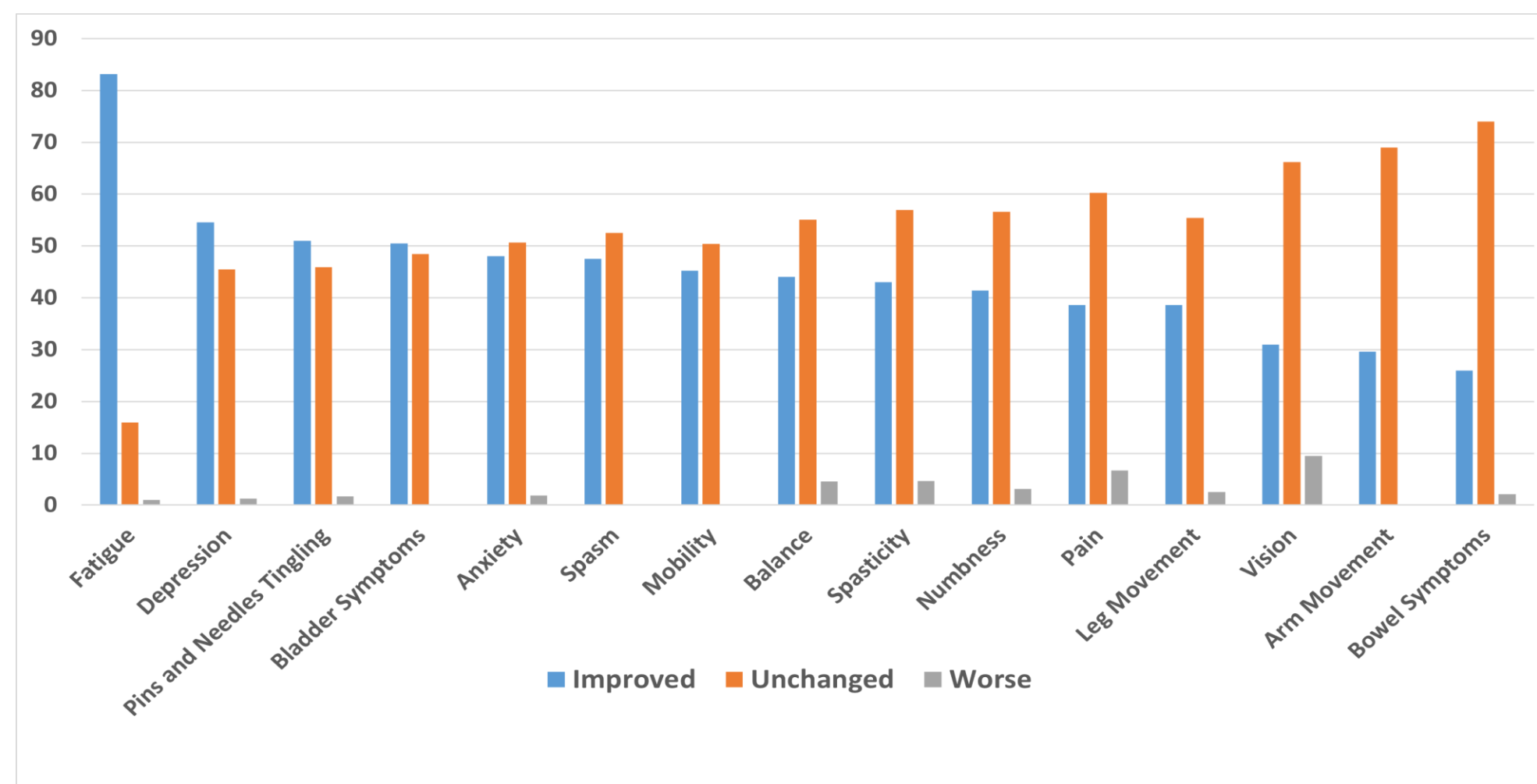
Over 60% of respondents estimated they had had over 100 HBOT sessions, and more than 11% more than 1000 sessions (Table 1)

Table 1 – Number of HBOT sessions (n=125)

Number of HBOT sessions received	n	%
Less than 50 sessions	27	21.6%
50-100 sessions	25	20.0%
Between 100 and 500 sessions	40	32.0%
Between 500 and 1000 sessions	19	15.2%
More than 1000 sessions	14	11.2%

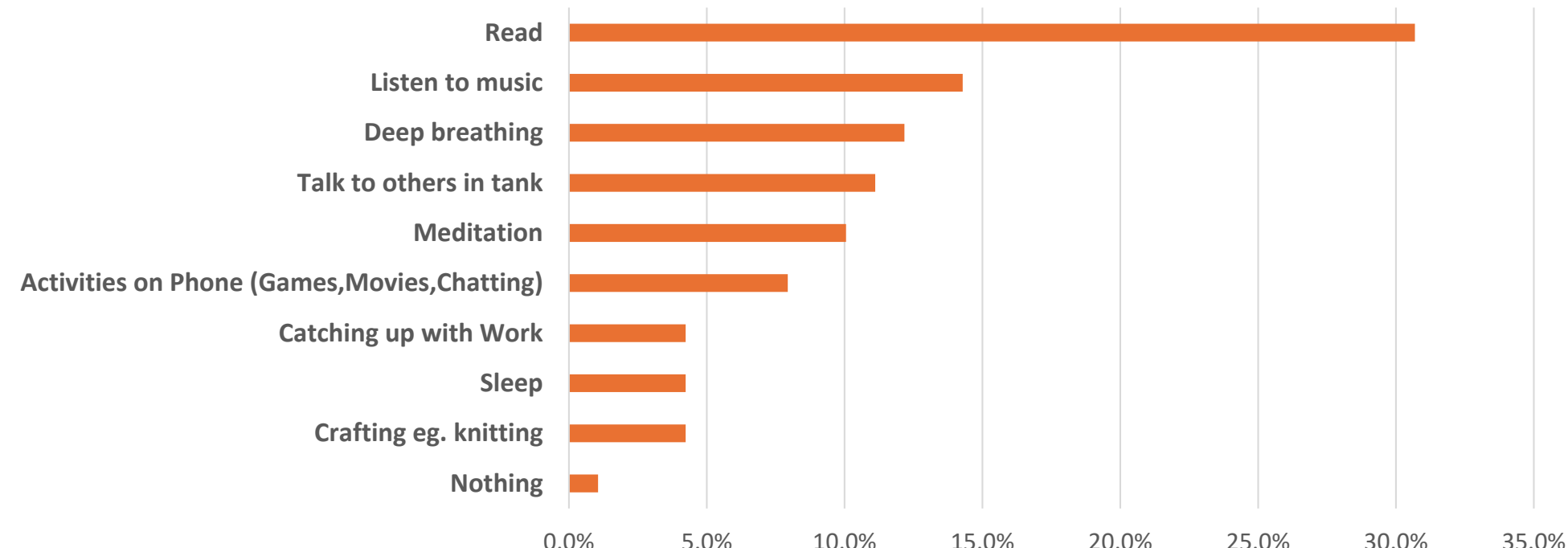
Fatigue, (83%) depression (55%), pins and needles/tingling (51%) and bladder symptoms (51%) were reported to be improved by HBOT (Figure 1). Many symptoms including bowel symptoms, pain, vision and arm movements were unchanged.

Figure 1 – Effect of HBOT on symptoms



There were 29 reports of side effects: Sore ears (n=18), fatigue (n=7), headaches, visual problems both (n=2) and claustrophobia (n=1). Respondents did a variety of activities during in the HBOT tank (Fig 2).

Figure 2 Activities done during HBOT



Respondents were also positive about the social aspects of attending HBOT sessions

“I have made long-term valuable friendships from doing oxygen, and that is very good for my mental health.”

Conclusions

Respondents to the survey had received a significant number of HBOT sessions, with over half having over 100 sessions. Given that the cost of each session was between £10 and £20 this represents a significant investment for pwMS.

Fatigue was the main symptom which was reportedly improved by HBOT (83% of respondents). The effect of HBOT on other symptoms was mixed. Similar number of respondents reported HBOT improved spasms as those who reported no change. However, there were few side effects reported with sore ears being the most common. Respondents undertook various activities within the tank, mainly reading and listening to music. They also valued the social aspects of attending for HBOT, often with the same group of people.

This study increases our understanding of the experiences of pwMS in terms of HBOT across the UK. The effect on fatigue was noticeable however it is not possible to determine if this effect is due to the HBOT or the overall positive experience of HBOT sessions.

References

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4. Moore, L. et al. (2020) 'Engagement of people with multiple sclerosis to enhance research into the physiological effect of hyperbaric oxygen therapy', Multiple Sclerosis and Related Disorders, 43.