

Briefing paper

Mii-vitaliSe: A pilot randomised controlled trial of a home gaming system (Nintendo Wii™) to increase activity levels, vitality and well-being in people with multiple sclerosis.

Thomas, S., Fazakarley, L., Thomas, P., Collyer, S., Brenton, S., Perrins, S., Scott, R., Thomas, F., Thomas, C., Jones, K., Hickson, J., Galvin, K., and Hillier, C., 2017, *BMJ Open*.

Exercise and fitness are important for all of us, but can offer additional benefits for people living with long terms conditions such as multiple sclerosis (MS). MS causes progressive nerve damage and symptoms include fatigue, muscle pain and balance problems. Symptoms and progression of MS vary from person to person, so although exercise can improve wellbeing, fitness and mood, it can be challenging to find affordable, accessible activities to suit each person's needs.

Home-based active gaming systems such as the Wii™ may offer a fun and convenient way for people with MS to start or maintain fitness activities. Existing research has highlighted the importance of using a person-centred approach along with mixed methods designs and including longer term follow up.

Outline of research

The research team developed a physiotherapist-supported Nintendo Wii™ intervention package incorporating off-the-shelf software aimed at increasing activity for people with MS, called 'Mii-vitaliSe'. Mii-vitaliSe involved home use of the Wii along with personalised support and behaviour change techniques. This was a pilot study to be used to test and refine the study design prior to a full-scale trial. Thirty adult participants with MS were randomised either to start Mii-vitaliSe immediately (for 12-month period) or after a 6 month wait (for 6-month period).

Each participant received a Wii™ bundle, including a balance board, Wii Sports™, Wii Sports Resort™ and Wii Fit Plus™ software. Additionally, they received a folder containing a Guidance Book, Personal Activity Workbook and Play Log and attended 2 orientation sessions in the hospital. Participants received personalised support from a physiotherapist via home visits and by telephone. Data was collected (at baseline, 6 and 12 months) via questionnaires about symptoms and emotional/psychological wellbeing, as well as physical assessments of balance, mobility, gait and hand dexterity. Semi-structured interviews were also undertaken with participants and physiotherapists.



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<http://bmjopen.bmj.com/content/bmjopen/4/5/e005172.full.pdf>

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Key findings and impact

- Participants were active two times a week on average. There were adverse events but no serious adverse events. The average cost per participant was £684.
- Participants reported a range of benefits including increased physical activity, improved mood, reduced stress, pain and fatigue, increased confidence, better sleep, improved balance, strength and posture, better coordination and walking.
- Mii-vitaliSe was reported to be convenient and fun, and the physiotherapist support was highly valued. Balance, yoga and aerobic games were used the most.
- For a larger study in the future, the likely primary outcome would be self-reported physical activity levels.

Conclusion

This is the first study to report on the use of Wii™ at home by people with MS in the UK incorporating behaviour change techniques, mixed methods and a consideration of long term follow up. Participation and adherence rates were high and the Mii-vitaliSe package was positively received. Findings from the study suggest that the Mii-vitaliSe intervention warrants testing in a full trial of effectiveness and cost-effectiveness.



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