Wearable technology for promoting physical activity in middle-aged adults with chronic musculoskeletal pain: a feasibility trial.

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BACKGROUND

Musculoskeletal chronic pain becomes evidenced and noticeable around middle age which negatively transforms their physiological function (Babatunde et al, 2017).

Middle-aged adults with musculoskeletal chronic pain are often physically inactive. This inactivity is linked with constant pain, tiredness, and disability. National Institute for Health and Care Excellence (NICE), guidelines recommended group or individual based physical activity for musculoskeletal patients with chronic pain.

Wearable technology has been used as an intervention to motivate middle-aged adults to increase physical activity (PA), but its application on musculoskeletal chronic pain patients' needs more investigation

OBJECTIVES

The purpose of this study is to evaluate the acceptability of all aspects of the randomised control trial (RCT) of wearable devices as an intervention to increase PA in middle-aged adults with musculoskeletal chronic pain.

In testing for the objectives, the following areas of the feasibility study were considered: recruitment and retention strategies for clinics and participants, the use of outcome measures, and intervention acceptability.

METHODS

This study used a mixed method randomised feasibility trial

Participants were recruited from Royal London Hospital for Integrated Medicine/University College of London Hospital (RLHIM/UCLH) National Health Service Trust (NHS) Outpatient Pain Clinic and randomised on a ratio1:3 into control group (standard care) and intervention group (standard care combined with wearable device).

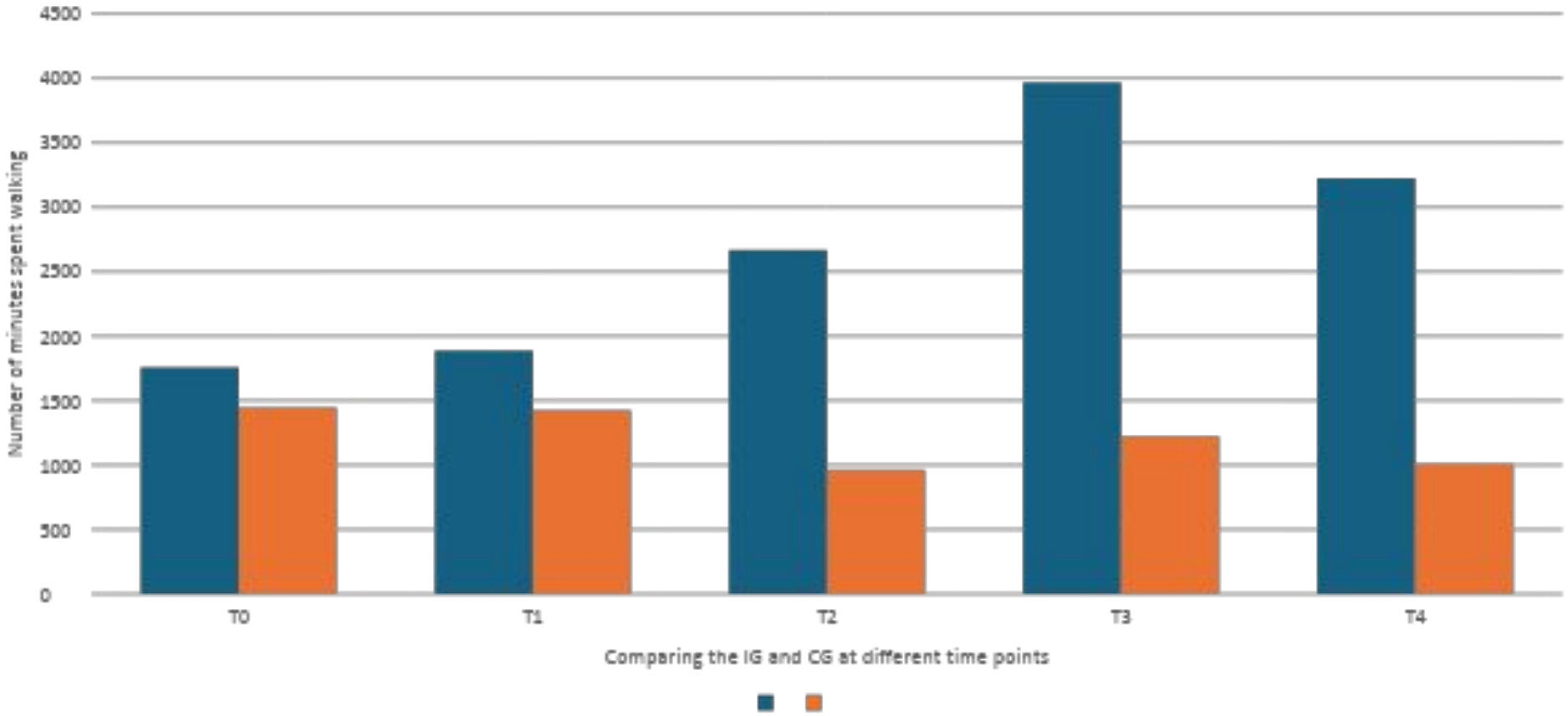
The feasibility study will last for 18 months, participants involvement will be for 24 weeks. Participants

RESULTS

I will be presenting a preliminary result on 13 participants: 8 in the intervention group (IG) and 5 in the control group (CG).

The preliminary quantitative result will be analyzing the metabolic equivalent of task (MET), and the preliminary qualitative results will highlight some of the themes from thematic analysis.

DATA ANALYSIS (QUANTITATIVE)



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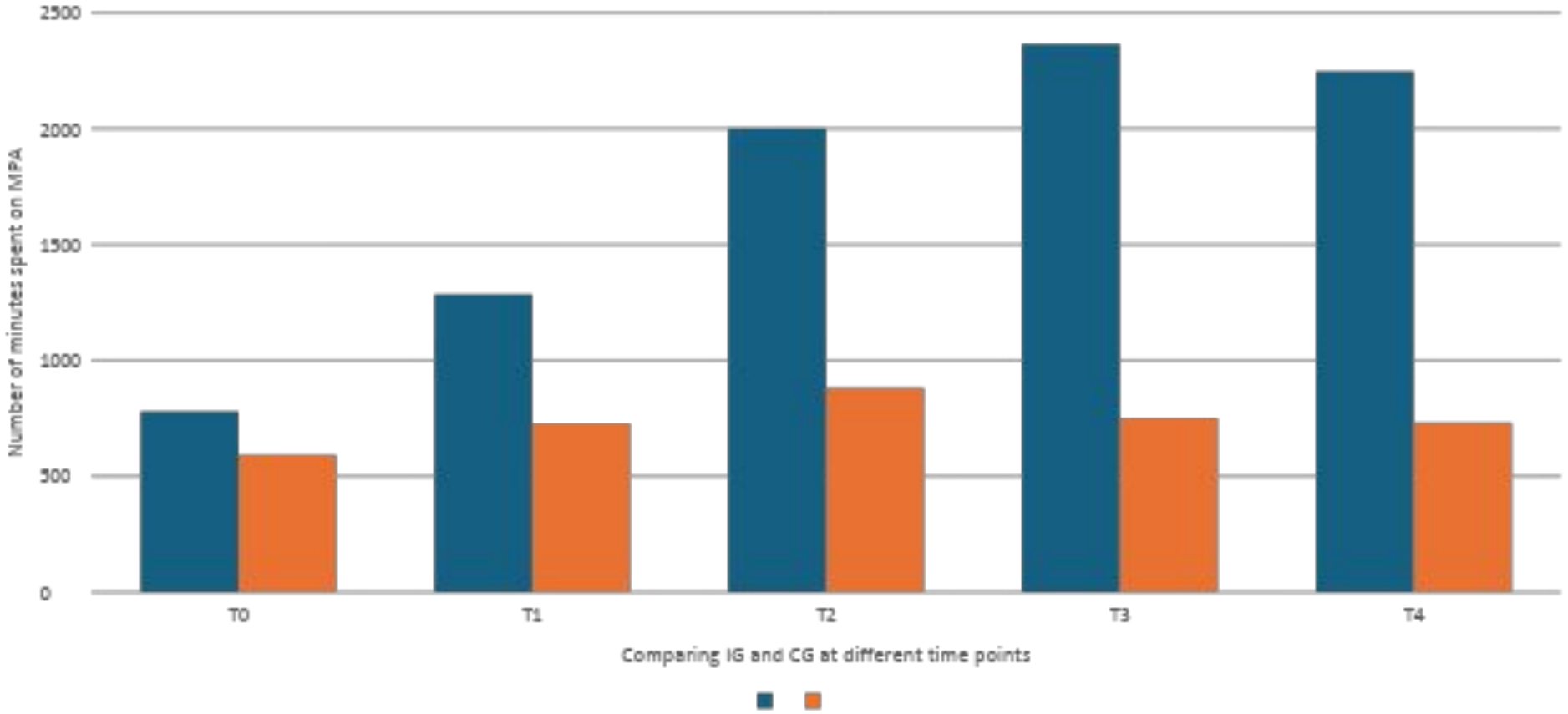

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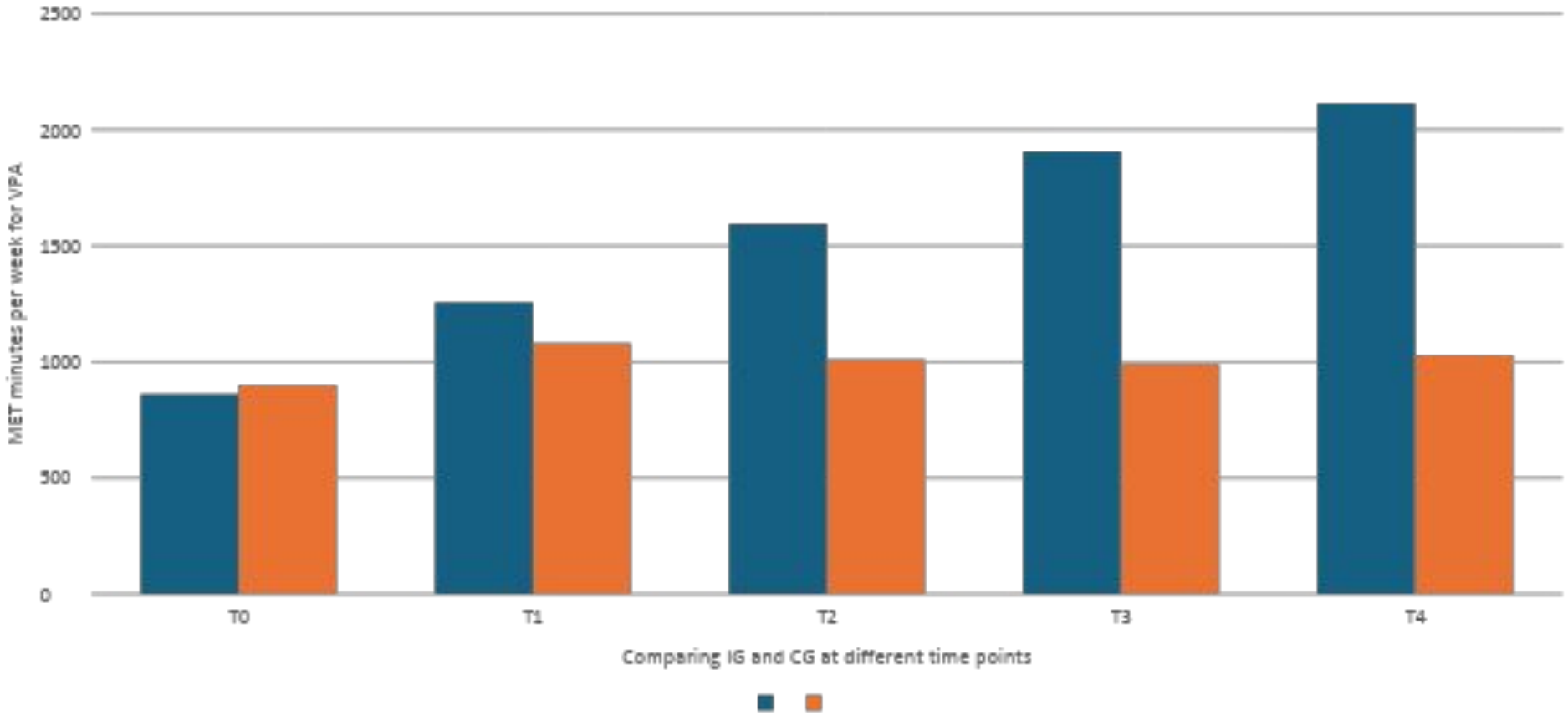

DATA ANALYSIS (QUALITATIVE)

MAIN THEME	SUBTHEME	PARTICIPANTS QUOTES
Diagnosis of MSK condition	Pain impact Mobility	"It took about 6 months before I got diagnosed, I was in terrible pain all over my body and getting tired"
Support and information	Signposting for treatment Signposting to social group	"I was referred to attend Yoga, tai chi, reflexology, hydrotherapy and CBT clinic"
Expectation from study	Changes in health status Improvement in health care with MSK patients. Burden	"To achieve some measure of comfort in my health especially the pain"

DATA ANALYSIS (QUALITATIVE)

MAIN THEME	SUB-THEME	PARTICIPANTS QUOTE
Device usage	Acceptability Reliability Adherence	I didn't Have to do anything, so it was easy to get on with it. I complied to using the device, only on few occasions that I had my episodes. I enjoyed my routine with the colourful feedback report
Facilitating PA	Awareness	I did realise I was doing so many activities until I started keeping records"

FINDINGS

Findings revealed that MET minutes per week increased when comparing baseline rates to the end timepoint between the IG and CG.

The findings showed fluctuations in pain outcomes and a slight improvement in psychological condition between both groups.

Finally, participants found the wearable device acceptable, user-friendly, and effective.

CONCLUSION

Recruiting of participants is ongoing for the study, and we have received UWL and NHS ethics approval for amendment to add more sites for recruitment of participants.

In conclusion, our findings have shown that there is improvement in PA and psychological conditions.

Participants have accepted the use of the device. However, the reduction in pain levels is fluctuating.

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THANK YOU!

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