



Original Research

Let's Move with Leon—A qualitative evaluation of a UK digital intervention to improve physical activity in people with a musculoskeletal condition



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ABSTRACT

Objective: This article presents a qualitative evaluation of a 13-week digital intervention, 'Let's Move with Leon', designed to improve physical activity in people with a musculoskeletal condition.

Study design: A qualitative evaluation embedded within a randomised controlled trial assessing the effectiveness of the intervention at improving self-reported physical activity.

Methods: A total of 184 participants received the intervention and were asked each week for 13 weeks to provide comment on their use and the usefulness of the digital physical activity behaviour change intervention. In addition, after 13 weeks, 12 participants took part in a semistructured interview to understand their use and the usefulness of the intervention. A thematic analysis was conducted on the combined qualitative data set.

Results: A total of 128 of the 184 intervention participants (70.11%) provided at least one qualitative comment over the course of the evaluation (mean number of comments per participant = 5); in total, 674 comments were received. The thematic analysis identified three themes: (1) dipping in and out, (2) one size does not fit all and (3) monitoring and feedback. The qualitative data suggest that participants used the intervention sporadically, dipping in and out due to other commitments, and competing programmes, their changing physical ability, confidence and motivation. Not getting off to a good start was detrimental to use; many wanted to come back to the programme at a more appropriate time. A 'one size fits' approach catered for some but not all participants. Whilst not a predetermined intervention component the act of monitoring levels of activity as a data collection method seemed to encourage physical activity but may also result in negative social comparisons.

Conclusion: Digital physical activity behaviour change interventions are not one-size-fits-all; personalisation is key. Monitoring of activity by a named person can create commitment. Many dip in and out. Digital physical activity behaviour change interventions could complement physiotherapy exercises for people with musculoskeletal conditions. Signposting to local activities should be considered.

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Introduction

People with musculoskeletal conditions can benefit from being more active. Benefits include pain reduction, improved physical function, and mental wellbeing.¹ However, it is reported that as many as 49% of people living with a musculoskeletal condition in the United Kingdom could be classified as inactive.²

Digital interventions have shown promise at improving physical activity.³ UK charity Versus Arthritis developed an online intervention to support people with a musculoskeletal condition to become more physically active, called Let's Move with Leon (LMWL), a 13-week programme of prerecorded exercise sessions, activity booklet, and social media support; intervention components and behaviour change techniques are reported elsewhere.⁴

A randomised controlled trial (RCT)⁵ including 369 participants (185 in the control group and 184 in the intervention group) reported that LMWL improved self-reported physical activity over 13 weeks with changes maintained at 6 months; however, improvements were small. No improvement was seen in health-related

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quality of life. Steps were monitored using participant smartphones in a self-selecting subgroup of 171 participants (91 in the control group and 80 in the intervention group). The step count was higher at 13 weeks in the intervention group, but differences were not significant. Overall, 72.3% of participants made use of at least one LMWL video over the 13-week test period, and 27.2% used eight videos or more, much lower than reports for other digital behaviour change interventions (DBCIs).^{6,7} The rate of intervention use declined over time, as is common.⁶

There is a need for a deeper understanding of the complex relationship between context and behaviour.⁸ The aforementioned RCT of LMWL suggests improvements in self-reported physical activity (an increase of 70 min per week at 13 weeks from baseline, 40 min greater than improvements seen in the control group); however, it does not provide intervention designers nor policy makers with contextual information on intervention use and usefulness.⁵ This qualitative evaluation aims to contextualise the use and usefulness of LMWL to support future intervention development and to provide knowledge to other DBCI developers.

Methods

Study design

This qualitative evaluation was embedded within an RCT assessing the effectiveness of LMWL at improving self-reported physical activity.⁵ A favourable ethical opinion was received from the London Metropolitan University School of Social Sciences and Professions Ethics committee in February 2021.

Recruitment

Adults (aged ≥ 18 years) with a musculoskeletal condition, who could read English, and who were computer and Internet literate with a working email account were eligible to take part in this study; digital consent was obtained from all participants.⁹

Three hundred sixty-nine participants, recruited using Facebook advertising between 1 August and 6 September 2021, took part in the RCT within which this qualitative evaluation was embedded (184 in the intervention group and 185 in the control group). Interested participants were asked at the expression of interest stage to confirm that they had not taken part in 150 min or more of physical activity that raised their breathing rate in a normal week and that they had not participated in a Versus Arthritis physical activity programme within the last 12 months. The 184 intervention group participants using LMWL over 13 weeks were included within this evaluation.

Data collection

Participants provided their age, gender, ethnicity, musculoskeletal condition, time since diagnosis, and their levels of physical activity measured using the Sport England Short Measure.¹⁰ Each week of the 13-week programme, the intervention participants were asked via an online survey “Do you have any comments that you would like to make about Let’s Move with Leon and/or your use of the programme?” In addition, after 13 weeks, 20 participants were randomly selected to take part in a semistructured online (Microsoft Teams) interview to understand their use and the usefulness of LMWL; 12 participants accepted this invitation. The interview topic guide is included as supplementary file 1. All interviews were conducted by the same researcher (H.A.) to ensure consistency.

Data analysis

A thematic analysis was conducted on the combined qualitative data from the interviews and survey responses.^{11,12} The thematic analysis was completed by all members of the research team who met on five occasions, discussing coding differences and agreeing upon the final themes.

Results

The semistructured interviews were held with 12 participants. All participants were female, with an average age of 64 years (range 53–76); 10 of the 12 participants were White. Despite the random selection, having an all-female and White interview cohort was not unexpected, as the RCT participants were also not representative of the UK population of people with a musculoskeletal condition being significantly over representative of females (96.5% compared with 55.9%) and White people (97.8% compared with 91.7%).⁵ Ten participants had multiple musculoskeletal conditions, one had just osteoarthritis, and another had an undisclosed form of joint pain. Ten participants were inactive at the start of the programme (<30 min of moderate-intensity activity in the previous 7 days), one was moderately active, and one was active (being 150 min or more of moderate-intensity activity in the previous 7 days). The interviews lasted 46 min on average.

One hundred twenty-eight of the 184 RCT intervention participants (70.11%) provided at least one qualitative comment over the course of the evaluation (mean number of comments per participant = 5); in total, 674 comments were received. The participant characteristics of the survey responders are provided in Table 1.

The survey participants were not representative of the general population of people with a musculoskeletal condition in the United Kingdom, being overrepresentative of females (95.3% compared with 55.9%), White people (96.9% compared with 91.7%), with a slightly younger profile (60.2% aged between 35 and 64 years and 39.1% aged ≥ 65 years compared with 49.6% and 34.1%, respectively), and a greater number classified as inactive (73.4% compared with 49%).² As expected, the profile of the survey participants was similar to that of the full RCT cohort.⁵

Thematic analysis

The thematic analysis identified three themes: (1) *Dipping in and out*, (2) *One size does not fit all* and (3) *Monitoring and feedback*.

Theme 1: dipping in and out

Some participants used the intervention sporadically, *dipping in and out* due to other commitments, and competing programmes, their changing physical ability, confidence and motivation. Many wanted to *come back to it later* at a more appropriate time. Not getting off to a good start was detrimental to use.

Other commitments

Participants *dipped in and out* of the intervention, with many highlighting that life commitments often get in the way. “My work commitments as a full time teacher have made it difficult to engage with the videos, and with other exercise programmes.” [Survey comment]
“I think my problem was the first week I was away on holiday, of the whole thing, and then as soon as I came back I had a terrible attack of gout, which has been ongoing ever since, and my walking is not good.” [Interview participant 1]

Table 1
Survey participant characteristics.

Participant characteristics	n	%
Gender		
Male	4	3.13
Female	122	95.31
Non-binary	0	0.00
Prefer not to say	2	1.56
Age		
<20	0	0.00
20–34	1	0.78
35–44	1	0.78
45–54	25	19.53
55–64	51	39.84
65–74	39	30.47
75–84	10	7.81
85+	1	0.78
Mean	62.06	
Ethnicity		
White	124	96.88
All other ethnicities	4	3.13
Time since diagnosis		
No diagnosis	7	5.47
<4 weeks ago	1	0.78
4 weeks up to 1 year	9	7.03
1–5 years	41	32.03
>5 years	66	51.56
Other	4	3.13
Condition		
Inflammatory arthritis or autoimmune disease	42	32.81
Osteoarthritis	92	71.88
Chronic or long-term/ongoing joint pain	80	62.50
Osteoporosis/thinning/weakening of the bones	12	9.38
Another form of joint pain	19	14.84
Data not provided	1	0.78
Multiple conditions (included within the above numbers)	85	66.40
Physical activity at programme initiation		
Inactive	94	73.44
Moderately active	22	17.19
Active	12	9.38
Mean mins of moderate/vigorous intensity	43.80	

Physical ability, confidence and motivation

A changeable physical condition influenced intervention use. “...getting washed and dressed is already a physical challenge for me. It takes me usually at least an hour when I have a bad day, even longer. So those things factored in makes it harder to even attempt exercise when you already know that the energy you have is limited and you need to do your daily work as well.” [Interview participant 11]
 “I found the exercises more difficult due to physical pain this week.” [Survey comment]
 Confidence and motivation also influenced participation. “I suppose I lack confidence really in things, that’s probably my initial problem. I lack confidence and then lack motivation.” [Interview participant 3]
 “Struggling with low mood. Finding it hard to motivate myself.” [Survey comment]
 “Yeah, I think for me I just want to stay as healthy as I can for as long as I can. And I think what this did do was make me look at [my] lifestyle, it made me look at, ‘What can I do for myself?’ I’m the only one that can change anything ...because I think that’s a priority for me.” [Survey comment]

Come back to it later

Participants spoke of an intention to become active and planned to engage when they felt more able or at a more suitable time. “The videos are very good and make you think. I will revisit the videos and content when I have more time. I feel they will do me a lot of good.” [Interview participant 5]

False start

Getting off to a good start was important. Some participants highlighted that they missed the first few sessions and then felt that they were playing catch up which in the end, resulted in disengagement. “I hadn’t even got going on it, because I was away the first week. And then I rushed to catch up when I got back, and glanced through the stuff – you know, the little preview – and I didn’t get into it.” [Interview participant 1]

Complementary and competing programmes

Some participants were involved in local physical activity programmes, as well as receiving physiotherapy exercises to do at home; this was seen as complementary in some cases, but others did not use LMWL because of this. “I’d started with physiotherapy at roughly the same time, I found that they overlapped a bit with the physio. I decided...the best thing to do was carry on with the physio exercises with this knee and then I filed all the exercise classes into one of my folders on my phone and I thought, well that’s something I can take up at a different date.” [Interview participant 9]
 “I’m already doing what the physio tells me – that is enough for now.” [Interview participant 2]

Theme 2: one size does not fit all (but it does fit some)

The digital physical activity intervention was standardised and delivered in a uniform way to all participants. This ‘one size fits’ approach catered for some but not all participants.

Personalisation

Some participants felt the need for the personal interaction and personalisation. “I need personal interaction. It’s good to have somebody saying, “Your back needs to be straighter”...you know, that sort of thing. I find that quite comforting.” [Interview participant 9]
 “it has to suit everybody. So, it’s not always going at your pace or your level sort of thing. It might be too hard, or it might be too light.” [Interview participant 9]
 Some participants stated that the intervention was not suitable for them. “Wheelchair user; exercises are not adapted to my needs.” [Survey comment]
 “I find the fitness video too basic and annoying for someone like myself who although has arthritis is younger and fitter than lots of others.” [Survey comment]
 Although some were able to take the intervention content and adapt the exercises. “Am tailoring the exercises for my personal needs.” [Survey comment].

It was a good fit

In contrast to the *dipping in and out* theme, some participants progressed through the programme as planned, welcoming the weekly commitment. The ability to save and return to the videos was also highlighted by these participants. “I did progress through the whole 12 lessons, and I did save them all, and I still do them.” [Interview participant 12]
 “I knew every week I was going to be doing something different. That was something I was actually looking forward to, because I knew exactly when I was going to be going back online, when to expect the email and when to get started again.” [Interview participant 11]
 For these participants, LMWL was pitched at the right level and pace.

“[I] found [the] Versus Arthritis stretching exercises...really helpful.” [Survey comment]

“[I] Cannot believe the change the exercises have made to my life, the classes at my local gym were too hard for me, I have built up my strength and stamina.” [Interview participant 4]

Social networking

This *social networking* subtheme relates specifically to one of the intervention components, the signposting to the LMWL Facebook page. Interview participants reported mixed feelings toward engagement with the social networking site.

“No, and I wouldn’t use it. I am on Facebook but I really only want Facebook for keeping in touch with former colleagues and family and some close friends.” [Interview participant 6]

“...the Facebook group...I found everybody was using it to say what was wrong with them, and I just found it depressing.” [Interview participant 8]

Theme 3: monitoring and feedback

Whilst not a predetermined intervention component, the act of monitoring physical activity as a data collection method seemed to encourage participants to be more active. However, monitoring also brought about a feeling of not doing enough as well as negative social comparisons.

“I do like when I get home seeing how many steps, I’ve done a lot of steps today and that really sort of cheered me up.” [Interview participant 3]

“I’ve got my friends saying – because I told them I was doing it on there – I said about my steps, and they were all laughing at me, because some of them do 22,000 steps a day. And I’m like, “I’m lucky if I get 7,000 or 8,000 in.” [Interview participant 12]

Having a named person communicating with participants each week in regard to the monitoring of physical activity seemed to install a sense of commitment.

“I was sending these steps in to [the principal investigator] each week, and some weeks I thought, “Oh, well, I’ve done quite well this week,” and then other weeks I’d think, “why haven’t I done that this week?” So, it sort of motivated me a little bit by doing that, because ...not that [the principal investigator] would be worried about what I was doing or not doing, but I just felt that I was letting myself down by not doing as much as what maybe I could have done.” [Interview participant 5]

Discussion

There is a continued need for DBCIs;¹³ they have the potential to increase physical activity.^{3,5} A 2018 systematic review of DBCIs to facilitate physical activity in people with osteoarthritis from Berry, McCabe, Muir and Walsh⁶ highlights the need for further exploration of their use in everyday life and over longer periods.⁶ This qualitative evaluation set out to understand the use and usefulness of LMWL to support future intervention development. The findings from the preceding RCT⁵ have been included where appropriate to add to the discussion of the findings from this qualitative evaluation.

Berry et al.⁶ could not distinguish between the effectiveness of digital interventions offering additional human support and those that do not. This qualitative evaluation suggests that participants welcome human interaction, having a named person contacting them, supporting the findings of a 2022 scoping review on the use of digital tools to support physical activity maintenance in people with long-term conditions.¹⁴

Monitoring and feedback have the potential to positively affect physical activity. The preceding RCT showed improvements in the control group over 13 weeks who did not receive any intervention other than monitoring their activity levels.⁵ The behaviour change

techniques of monitoring¹⁵ and feedback have the potential to improve physical activity in people with a musculoskeletal condition.⁵ The monitoring of physical activity and steps has been shown to help incorporate physical activity into daily life.¹⁶ However, intervention designers should be mindful of potential negative social comparisons from activity monitoring. Goal setting is often identified as a facilitator of physical activity in DBCIs.^{6,14} Goal setting is used in LMWL, but no feedback is given to users; the monitoring of activity with feedback given by a named person could enhance the success of the intervention.

Personalisation is important. Whilst LMWL was pitched at the right level for some, others felt it too easy, or unsuitable. Linked to the earlier point on goal setting, personalised incremental time-sensitive physical activity goals have been shown to improve physical activity in people with knee osteoarthritis.¹⁷ Incremental goals set by the participant, or a physical activity or healthcare professional, can contribute to success.⁶ Allowing participants to select their own activities that can be easily integrated into daily life, including those that may not have physical activity as the main aim (i.e. mowing the lawn or walking the dog) should also be considered.⁶

Greater human involvement may increase success;¹⁴ the use of motivational messages by healthcare professionals has been identified as a driver of physical activity, supporting engagement and maintenance.¹⁴ Creating a sense of commitment could improve engagement and outcomes, as highlighted in this qualitative evaluation. Physiotherapists are seen as credible sources of information and guidance; they offer an opportunity to promote LMWL as part of rehabilitation.¹⁸

A challenge of digital interventions is to create the social interaction that participants would experience in a face-to-face setting. This evaluation suggests that some participants did not want to engage with the LMWL Facebook page, viewing it negatively. The lack of use of online forums and social media in such digital interventions is supported by Webb, Peel, Fife-Schaw and Ogden.¹⁹

The *dipping in and out* theme suggests that the intervention was seen by some as an addition to an already busy life; this may explain why over the 13-week test period, only 27.2% used eight videos or more,⁵ much lower than that reported for other DBCIs.^{6,7} This is despite the intervention aiming to provide short exercise videos that could be completed at any time fitting in with other requirements. Time was a limiting factor.

The preceding RCT intimates that early engagement influences retention; action is required to encourage use at programme initiation. Older people and those more motivated at intervention initiation are more likely to have higher levels of engagement. DBCIs such as LMWL are likely to attract those ready to make a change, who have a knowledge of why physical activity is beneficial.⁵ No themes were identified in regard to condition nor time since diagnosis, suggesting that a non-condition-specific intervention is acceptable and feasible; however, further research in this area is suggested.

Some were involved in other local physical activity programmes. Whilst this may detract from LMWL, decision makers should consider signposting to local provision, both as an exit route, but also as an alternative to the intervention, supporting people’s desires to do an activity that is right for them that they enjoy.

Strengths and limitations of this evaluation

This evaluation uses a broad data set, including 674 comments from 128 participants and 12 in-depth interviews. This evaluation and the companion RCT⁵ demonstrate that it is possible within the discipline of public health to undertake detailed intervention evaluation against a controlled comparison group whilst also gathering rich qualitative data on user experiences using pragmatic

research designs. This evaluation and the preceding RCT⁵ also provide a meaningful data set against which future iterations of LMWL can be evaluated.

This evaluation is not without its limitations. It is acknowledged that a greater number of interviews could have been conducted; however, only 12 interviews were possible with the resources available. There is an overrepresentation of White females in this evaluation, questioning the generalisability of the findings. However, it has been suggested that females are more likely to use digital platforms to guide physical activity.²⁰ Recruitment to this evaluation took place at a time when COVID-19 measures in the United Kingdom were being relaxed.²¹ The significant bias towards females may reflect the audience attracted to DBCIs at this time.^{22,23} Designers of physical activity DBCIs should be mindful of the potential overrepresentation of females; this warrants further exploration in future evaluations.

Conclusion

DBCIs are unlikely to be a one-size-fits-all; personalisation, where possible, is important. Intervention designers should consider that physical activity DBCIs are likely to attract females ready to make a change, with a knowledge of why physical activity is important. The monitoring of physical activity by a named person can help to create commitment; this could be combined with personalised goal setting. A structured weekly programme might not be the best approach as many dip in and out; therefore, alternative approaches or combination of approaches should be considered, allowing participants to choose what approach and support is best suited to their needs. Physiotherapists are important to delivery; digital physical activity DBCIs could be complementary to physiotherapist-prescribed exercises. Some prefer local face-to-face activities to digital interventions, and therefore, the signposting of users to local activities should be considered. Evaluation of physical activity DBCIs should continue to contextualise understanding of their use and usefulness in everyday life.

Author statements

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Ethical approval

Ethical approval was received from the London Metropolitan University School of Social Sciences and Professions Ethics committee in February 2021.

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Competing interests

There are no competing interests to declare.

Author contributions

J.W. was the principal investigator for this evaluation. J.W. designed the study, managed the survey data collection and interview recruitment. H.A. conducted the interviews. All authors were involved in the data analysis. The manuscript was drafted by J.W. with H.A. and M.M. providing final approval.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.puhe.2023.11.009>.

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