

Joint Pain Advice in the workplace

Work and Health Challenge Fund Project

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Authors

Professor Mike Hurley, Clinical Director, Health Innovation Network

Andrea Carter, Health Innovation Network

Amber Gibney, Health Innovation Network

Sally Irwin, Health Innovation Network

Dr Rachel Hallett, St George's University of London and Kingston University

Dr Jo Erwin, Bone and Joint Research Group, Royal Cornwall Hospitals NHS Trust

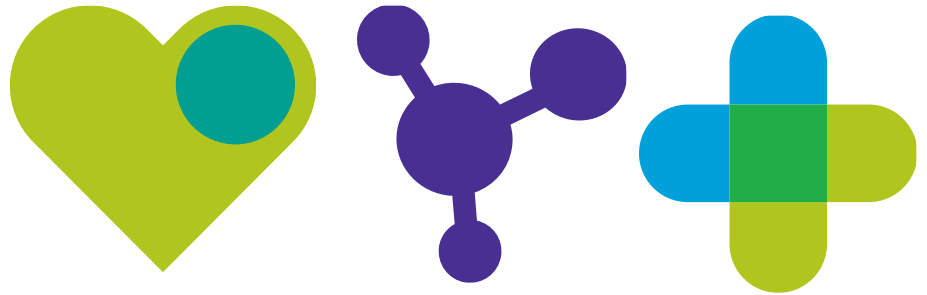
Professor Tony Woolf, Bone and Joint Research Group, Royal Cornwall Hospitals NHS Trust

About

The Joint Pain Advice (JPA) model was developed by the Health Innovation Network (HIN) as a result of an identified need for accessible, personalised, understandable information and practical advice and support about how to self-manage the impact of chronic pain. Pilot studies have demonstrated that JPA supports participants with chronic knee, hip and back pain to reduce their pain and symptoms, increase their physical activity levels and improve their physical function and mental wellbeing in both clinical and community settings.

HIN and the Bone and Joint Research Group (part of Royal Cornwall Hospitals NHS Trust) were awarded funding from the Work and Health Challenge Fund to test the JPA model delivered in the workplace to employees.

The evaluation of this service improvement project aims to understand the effectiveness of JPA as a workplace intervention. It explores the clinical effectiveness of JPA and the acceptability and feasibility of the programme for participants (employees), JPA Advisors and workplaces, delivered in a 'real world' workplace setting.



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Executive Summary

Overview

In the UK over 8.75 million people have osteoarthritis (OA) and around 10 million people have chronic low back pain. These problems impact an individual's personal, social and working lives, affecting physical and mental health and wellbeing¹. They also have a wide socioeconomic impact through substantial health and social care expenditure and lost productivity². Although National Institute for Health and Care Excellence (NICE) guidelines core recommendations for the management of OA³ and low back pain⁴ are to provide information and advice to improve understanding of the condition and management strategies and to encourage increased physical activity and support weight loss (where appropriate) as effective ways of managing the condition and its impact, in reality, few people receive this advice.

JPA supports people to self-manage their chronic hip, knee and/or back pain, based on NICE guidelines. Within the JPA model, participants are invited to up to four face-to-face appointments over six months. This intervention has been successfully piloted in primary care and community settings to c600 participants who reported improvements in pain, physical function, physical activity and mental wellbeing^{5,6}. It was also shown to reduce follow-up appointments with a GP⁵. A social return on investment evaluation found that the JPA intervention offered a social return on investment of between £2 and £4 for every £1 invested⁷.

As part of this project, JPA was offered to employees across four large organisations in London and 16 organisations in Cornwall, including several small and medium enterprises (SMEs). Two different models of delivering JPA were tested:

In London, existing members of staff of the larger organisations were trained to deliver JPA to their organisation's employees. They are referred to in this report as 'in-house' Advisors.

In Cornwall, JPA Advisors were trained and travelled around from workplace to workplace to deliver JPA to employees of several organisations, including small and medium enterprises (SMEs). They are referred to in this report as 'peripatetic' Advisors

Key findings

481 participants accessed the JPA service between April 2019 and June 2020. The majority of participants were female (74%) with an average age of 49 years. The most common reason for accessing the service was back pain (32%) however, many participants (42%) stated more than one joint was affected. Overall JPA attendance and completion rates were high, possibly because participants were motivated and self-referred themselves to the service. Of the 481 participants, 382 (79%) returned for a 2nd appointment, 323 (67%) for a 3rd appointment and 257 (53%) for a final appointment.

There were significant improvements in outcomes at all time points. Participants reported reduced pain and less effect of pain on their ability to do normal daily activities, they were able to complete more sit to stands (a measure of lower limb function) and became more active. Musculoskeletal Health Questionnaire (MSK-HQ) scores increased indicating better MSK-HQ health status (symptoms and quality of life) and participants reported feeling more

confident in their knowledge to self-manage their condition.

In the six months during JPA compared to the 6 months before starting JPA participants reported fewer days absent from work, fewer GP consultations and fewer people reported having investigations or treatments (such as physiotherapy, x-rays/scans, appointments with a consultant) for their knee, hip or back pain. Of those participants taking medication at baseline, fewer were still taking medications at 6 months and the number of medications that participants were taking decreased.

Participants were satisfied with the service. They described how they valued talking to an Advisor about their experience during one-to-one, unrushed appointments, they felt listened to and the advice they received felt useful and personally relevant. They attributed these improvements to the ethos, content and format of JPA. Advisors described how they had enjoyed delivering the service and felt it added to existing services by offering a more holistic, self-management approach to supporting employees with joint and back pain. Managers and link workers recognised that MSK health impacted on staff health and wellbeing and staff absence and acknowledged the need and want to support employees. JPA was seen as complementary to other services offered and the holistic self-management approach valued.

Summary and recommendations

Joint Pain Advice (JPA) is a service that can help people with chronic hip, knee and/or back pain self-manage their problems. It can be set up and delivered in large public organisations and small/medium enterprises. The service is relatively inexpensive, reduces pain, improves physical, mental and emotional health and wellbeing, and reduces absenteeism and healthcare utilisation. JPA can produce a healthier, happier, more productive workforce and has the potential to reduce the burden of musculoskeletal (MSK) conditions on the workplace and in Primary Care by increasing access to the support and guidance recommended by NICE. However, services require ongoing and adequate financial resource to allow them to be embedded into the system and ensure they are sustainable.

- Employers should consider delivering JPA in workplaces to improve the physical, mental and emotional health and wellbeing of their workforce, increased productivity by having a healthier, happier workforce.
- When considering the programme employers and employees need to understand what is required to avoid wasting time, effort and resources.
- Large organisations could consider allocating a member of staff, preferably from Occupational Health Departments if available, to be their “in-house” Advisor, as this may be the most efficient and cost-effective option (depending upon availability and cost of local peripatetic Advisors).
- SMEs with limited resources could share a peripatetic “roving” Advisor across many organisations.
- The service is flexible and can be adapted to accommodate local contexts, working practices and personal preferences so that JPA can be delivered with minimal disruption to the workplace.

Background

In the UK osteoarthritis (OA) affects more than 8.75 million people and nearly three quarters of people with OA report being in constant pain¹. OA can develop in any joint in the body, but when it affects the knee or hip, mobility can be affected leading to disability. 9.11 million people in England have back pain with around a third of the UK population experiencing back pain each year¹. It is the most common reason why middle-aged people visit their GP, with one in 12 adults presenting each year with this complaint⁸ and in 2017 was the leading cause of years lived with disability in the UK¹. These conditions impact adversely on all aspects of a person's personal, social and working lives¹ and result in substantial health and social care expenditure and lost productivity².

In the workplace joint and back pain can force people to change duties, reduce hours, take sick leave and early retirement². Each year OA results in 3 million lost working days and back pain 4 million lost working days¹. Approximately 1 in 4 people who consult their GP about OA leave the workplace prematurely⁹ and, after minor illnesses such as colds and sickness, back pain is the second most common cause of short-term absence¹. Adding to this, the association between chronic pain, MSK conditions and depression and stress can lead to increased absence from work¹⁰. As the prevalence of joint pain increases with age and the working age is extending, the impact of joint pain will increase^{11,12}. A survey about people's attitudes and experience regarding health and the workplace conducted by Arthritis Research UK in 2016 found that 1 in 5 (20%) were worried they wouldn't be fit enough to continue working in the next year and over 1 in 7 (15%) wouldn't disclose a long-term health condition such as arthritis or recurrent joint pain to their employer¹⁰.

The core advice in the NICE evidence-based guidelines for the management of OA³ and non-specific low back pain (LBP)⁴ is to use a patient-centred, holistic approach using education and self-management strategies, with a focus on increasing physical activity and maintaining healthy body weight. Changing established behaviours takes time to initiate and sustained effort to maintain. Current pressures in primary care prevent successful delivery of the NICE core recommendations and consequently, few people receive these recommendations^{13,14,15}.

To reach the large number of people needing better care and advice the HIN developed a new model of care, Joint Pain Advice (JPA), a service that can teach a range of healthcare professionals and others (clinicians, health trainers, social prescribers) to deliver the NICE advice to individuals with chronic knee, hip and/or back pain. The model can easily be incorporated into existing services. Its flexibility means it can be delivered by a wide range of professionals and sits comfortably both within community, clinical and workplace settings.

Pilot studies have demonstrated that JPA supports participants with knee, hip and back pain to reduce their pain and symptoms, increase their physical activity levels and improve their physical function and mental wellbeing in both clinical and community settings. The purpose of this evaluation is to understand the feasibility of setting up and delivering JPA in large public organisations and private small and medium enterprises (SMEs) in Cornwall and London and to determine effectiveness, whether the positive results seen in clinical and community settings are replicated in a workplace setting.

Joint Pain Advice (JPA) in the workplace

Joint Pain Advice in the workplace was one of 19 initiatives across the UK selected to receive funding from the Work and Health Challenge Fund. The Work and Health Challenge Fund aimed to test potential solutions to help people with disabilities and health conditions remain in work and was part of a wider Innovation Fund managed by the Work and Health Unit. The Work and Health Unit was set up by the Department for Work and Pensions (DWP) and the Department for Health and Social Care (DHSC).

Providing JPA in the workplace offers the potential to:

- provide easier, more convenient access to effective care to a working population
- increase people's physical and mental health and wellbeing and quality of life enabling them to carry out their normal activities of daily living, including work
- reduce presenteeism and absenteeism at work
- develop a healthier happier workforce

In addition, there is evidence that workplace-based initiatives increase access to, and engagement with, health promotion activities by those in lower socio-economic groups.

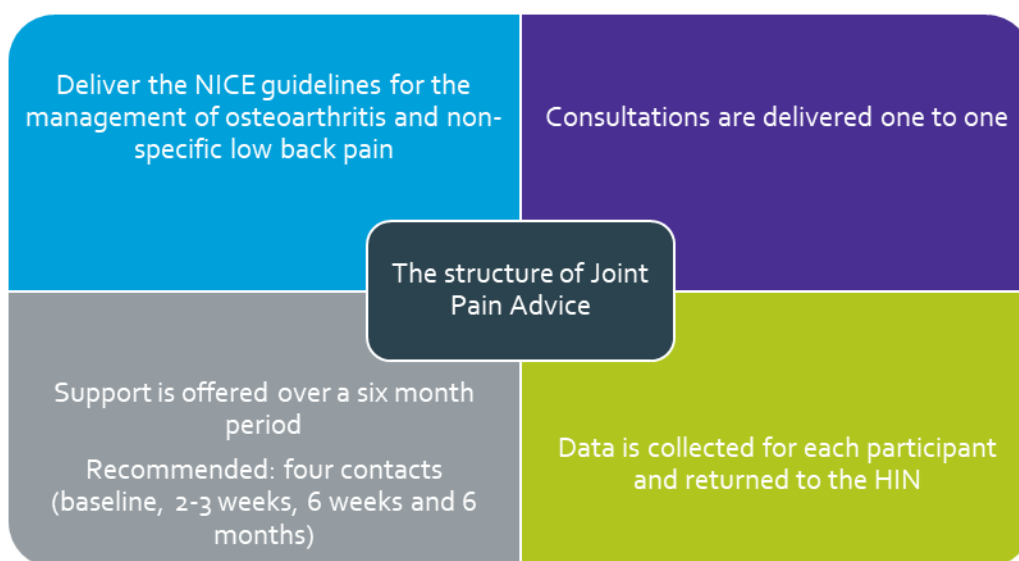
This was a collaborative project between the HIN and the Bone and Joint Research Group. Six partners were engaged as part of this pilot study who offered Joint Pain Advice to employees across 20 organisations (four in London and 16 in Cornwall). Partners were offered a nominal payment per appointment delivered along with project management support to facilitate implementation.

The evaluation was undertaken by the HIN and Bone and Joint Research Group and took a mixed methods approach, incorporating clinical outcomes and participant, Advisor and manager (workplace) feedback. This report summarises the findings and learning from the project.

The Joint Pain Advice model

The JPA service involves participants with chronic hip and/or knee pain and/or low back pain attending a series of up to four 30-minute face-to-face consultations over six months with an “Advisor” trained to deliver JPA. The Advisor works collaboratively with participants discussing the possible causes of pain, helping participants understand how they can help themselves and provides “supported self-management”. Behaviour change techniques such as motivational interviewing, goal setting and action planning, along with pain coping and self-management strategies, are used to nurture healthier lifestyles, in particular the importance of being active and maintaining a healthy weight.

The JPA model has four core components:



Two different models of delivering JPA were tested:

- an 'in-house' Advisor, existing members of staff were trained to deliver JPA within the organisation
- a 'peripatetic' JPA service, trained Advisors travelled between workplaces and delivered JPA to employees of several organisations

During the engagement phase of the project, organisations in London were offered both models of delivery. The larger organisations chose to have an 'in-house' Advisor, especially if they had an Occupational Health Department. Peripatetic Advisors in Cornwall covered several sites including small and medium enterprises (SMEs), for whom having an 'in-house' Advisor may not have been feasible. This model opened up the service to SMEs which is important, and a significant strength of the service, given a large percentage of businesses are SMEs.

Method

Employers/Workplaces

To take part in the study employers had to be willing to allow existing staff members time to be trained and to implement and deliver the JPA service to employees or, allow peripatetic Advisors access to their premises, facilities and employees, allocating a 'link contact' to liaise with the Advisor and provide booking and recruitment support. Employers also had to be willing to allow their employees time off work to engage with the service.

JPA Advisors

Advisors had to attend a half day training session, delivered by the HIN, before offering JPA. 14 Occupational Health Department staff members of four London organisations were trained as JPA Advisors by the HIN and offered JPA to employees of their workplaces. Two individuals were trained as JPA Advisors by the HIN in Cornwall and offered the JPA service to employees of 16 organisations who wanted to offer JPA to their employees and agreed to be part of the project. The training covered:

- Information on osteoarthritis and chronic low back pain
- Risk factors for developing common MSK disorders such as osteoarthritis and low back pain
- Behaviour change techniques
- Self-management strategies and myth busting
- The JPA model and referral pathways
- Outcome measures

In general, Advisors in London liaised with the employees to book initial baseline assessment themselves and the peripatetic Advisors worked with a 'link contact' at an organisation who then booked appointments on their behalf. In both models, Advisors then booked the subsequent review appointments with the participants at mutually convenient times.

Advisors were expected to collect data from participants at each appointment and return it to the HIN. People who cancelled or did not return for review appointments were contacted to ascertain why, re-book, to collect feedback on the service and reasons for withdrawal if appropriate.

Participants

Participants were eligible to access the service if they were employed by the organisation and met the following criteria:

- 40 years and older for those with hip and/or knee pain
- 18 years and older for those with low back pain

With either

- a clinical or radiographic diagnosis of hip and/or knee osteoarthritis and/or non-specific low back pain

Or

- a history of hip, knee and/or low back pain lasting 3 months or longer (chronic/persistent pain)

They also needed to be able to take time away from work to attend appointments.

Participants were excluded from using the service if they were less than 40 years old experiencing knee and/or hip

pain or less than 18 years old with low back pain, indicated any 'red flag' symptoms and/or had an acute MSK disorder. A screening document was provided to support this process.

Recruitment

Recruitment strategies varied with employers and depended largely on how they communicated and engaged with their employees. Most frequently recruitment was through leaflets, flyers, posters, emails, staff bulletins, staff intranet, 'desk drops' and through managers at local team meetings. A couple of employers targeted employees who previously had reported musculoskeletal problems. How participants heard about the service was not recorded at the initial appointment however a survey sent to 453 participants (response rate 29%) tells us that the majority of respondents from Cornwall heard about the service through an email sent out at their work (76%) and in London, most respondents heard about it through the staff intranet (59%). Participants were asked what they thought the best ways to promote the service were. The most popular method selected by respondents from Cornwall was an email sent out through work (86%) and from London was through the staff intranet or an email sent by work (85%).

Referral routes

Referral routes were determined by the workplaces. Where possible, existing referral pathways and booking systems were used (with slight adjustments in some instances) or existing department contact email addresses used to manage referrals. For some workplaces, a new referral pathway and booking system was established. Employees could self-refer to the JPA service, or occupational health departments running the service referred participants.

Implementation

Implementing JPA required setting up referral pathways and booking systems before starting the service. In SMEs, without good links between the Advisors and Link Contact, recruiting appropriate participants was problematic because it was difficult to give potential participants details about JPA and organise the initial baseline appointment. However, larger organisations also had problems with recruitment, such as inappropriate referrals. This highlights the importance of a JPA lead or Link Contact in both models to raise awareness and promote the service within their organisation, explain to employers and potential participants what JPA is and is not, who it is for (to avoid inappropriate referrals), what it involves (commitment to attend up to four appointments) and encourage employers to release workers for appointments. The intention was that employees would be allowed time out of their working day to attend JPA appointments. Promoting and getting buy-in from line managers was vital in raising awareness of the JPA service and allowed participants to feel supported in taking up the service. A leaflet aimed at informing line managers about JPA and its benefits would be helpful.

Consultations

Participants were invited to attend up to four face-to-face appointments lasting approximately 30 minutes. Some telephone appointments were offered at 2-3 weeks or if participants were unable to attend a face-to-face appointment. As a result of the Covid-19 pandemic telephone and video, calls were offered for some 6 month appointments. Advisors worked in collaboration with participants using behaviour change techniques including motivational interviewing, goal setting and action planning as well as simple self-management strategies to develop healthier lifestyles. Clinical outcomes data and feedback was collected at each consultation to monitor progress.

Signposting

An important aspect of JPA was signposting participants to services that could support them further, such as exercise, weight management and smoking cessation programmes, offered by a workplace or external providers. JPA highlighted other appropriate services available that participants were not aware of including other healthy workplace initiatives. This provided the opportunity for further support to self-manage joint pain in the long term and ensured JPA was provided within the boundaries of the JPA role and the Advisor

Individual participant data

Descriptive data was collected of individual participant's age, gender, joint(s) affected by pain, employment status, salary, nature of their work (sedentary/manual) at baseline and absenteeism, outline healthcare utilisation (medication usage, GP appointments), the severity of their condition in the 6 months before taking part in the service, and during the 6 months between the baseline and 6 month review appointment.

Effectiveness

To evaluate the effectiveness of the JPA service delivered in the workplace by Advisors, quantitative outcomes were collected at the initial baseline assessment and each review appointment, recommended at 3 weeks, 6 weeks and 6 months after the baseline assessment. The Musculoskeletal Health Questionnaire (MSK-HQ) was used to assess MSK-HQ health status (symptoms and quality of life). Physical activity was determined by the number of days per week participants reported undertaking 30 minutes or more moderate intensity physical activity, and the number of sit-to-stands a participant could perform from a chair with their arms folded in 30 seconds. Pain, physical function and confidence scales were also used. These findings were shared with each participant to feedback progress, reinforce health messages and motivate participants.

Outcome measures

Outcomes collected at each appointment are shown below (table 1)

Measure	Initial Appt	3 week review	6 week review	6 month review
Age, gender, joint(s) affected, employment status – in work, off sick or paternal/maternity leave, active or sedentary job, income range	x			
MSK-HQ	x	x	x	x
Physical activity levels (days active)	x	x	x	x
Number of sit to stands	x	x	x	x
Pain assessment scale scores	x	x	x	x
Physical function measure scores	x	x	x	x
Confidence for self-management scores	x			x
Impact on workdays absent from work changes to work duties or environment as a result of knee, hip or back pain (in last 6 months)	x			x
Healthcare utilisation - number of GP visits, medication, investigations or treatments (in last 6 months)	x			x
NHS family and friends test				x

Reasons for not completing all sessions (drop out) were documented where possible to understand adherence to the model and acted as a proxy for acceptability of the model to service users.

Qualitative data

Participants from the organisations were invited to take part in an interview. Participation was voluntary and a gift voucher was offered in recognition of the participants contribution. A postdoctoral researcher at St George's University of London and Kingston University and a Research Associate at the BJRG conducted the interviews which were digitally recorded and subsequently transcribed. A semi-structured interview guide was used to guide the conversation.

Participants were invited to complete an NHS friends and family test at their last appointment (at 6 months) indicating how likely they would be to recommend the service to friends and family. All participants were offered the opportunity to feedback about the service via an online survey.

Advisors were invited to attend a focus group alongside other Advisors from organisations involved in the study. Two focus groups took place concurrently facilitated by the postdoctoral researcher at St George's University of London and Kingston University and a member of the HIN evaluation team. A semi-structured focus group guide was used to guide the conversation and the focus groups were recorded and transcribed.

Service Managers were invited to take part in an interview. A postdoctoral researcher at St George's University of London and Kingston University conducted the interviews which were digitally recorded and subsequently transcribed. A semi-structured interview guide was used to guide the conversation.

Link contacts were invited to take part in an interview. A Research Associate at the BJRG conducted the interviews which were digitally recorded and subsequently transcribed. A semi-structured interview guide was used to guide the conversation.

Data management and analysis

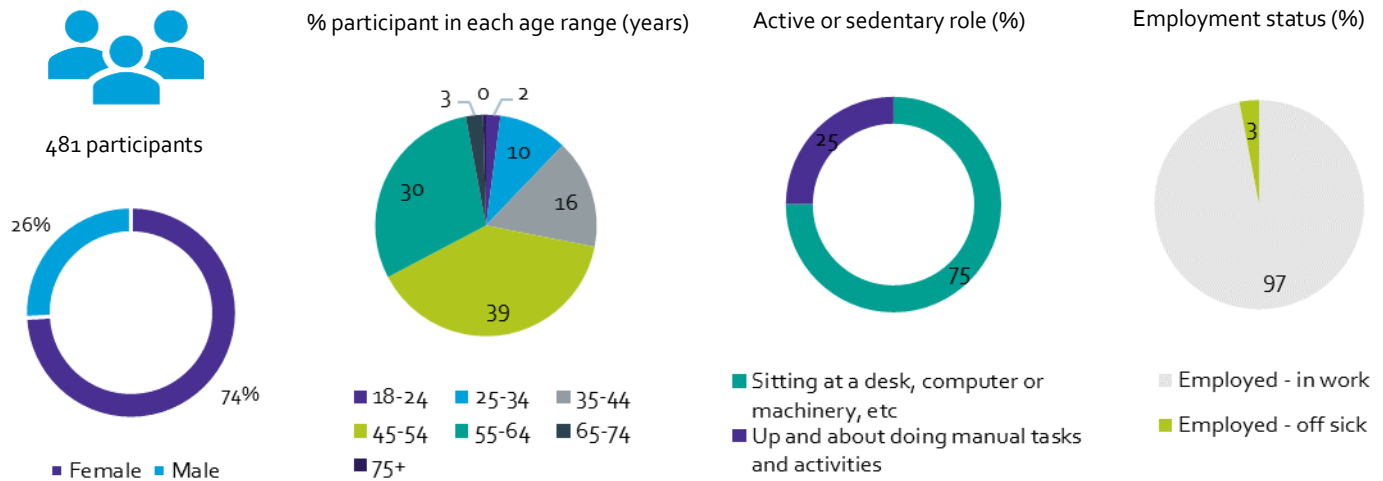
Quantitative and qualitative data were pseudonymised and entered electronically into either a Microsoft Access database or Microsoft Excel spreadsheet by Advisors. Data from each site was sent via secure email to the HIN for analysis. Statistical analysis was carried out by the HIN Informatics team. Analyses were conducted using the SciPy library in Python 3.7. Effect sizes (Cohen's D) were calculated and used to calculate power. A paired two sample T test was used to compare the means at baseline and follow up.

Results

Demographics

481 participants accessed JPA. The majority of participants were female (74%) with a mean age of 49 years. Most (39%) were between 45 and 54 years old with few participants 65 and over, most likely due to the retirement age.

The majority of participants (97%) were working whilst 3% reported being on sick leave. Most participants (75%) reported a sedentary role indicating most of their time was spent sitting at a desk, computer or machinery and 25% a more active role, up and about doing manual tasks and activities.



In general, there was no difference between participants recruited from London and Cornwall partner organisations. London organisations recruited 204 participants (42% of total), of whom 84.5% were female, and the average age was 48 years old. Cornwall recruited 277 participants (58%) of whom 67% were female, with an average age of 49 years.

There was an even spread of salaries across geographical locations. Participants in London tended to have higher salaries than participants in Cornwall, possibly due to the 'London weighting' allowance compensating for the higher cost of living in London. 20% of participants preferred not to report their income range and it is acknowledged that the responses provided did not reflect whether an individual worked full or part time hours.

Reason for attendance

More people had back pain (32%) as their primary presenting complaint than hip or knee pain. However, many participants (42%) stated more than one joint was affected. Joints affected are shown in table 2.

Joint affected	% of participants
Back	32
Back and Hip	8
Back and Knee	13
Back, Hip and Knee	14
Hip	4
Hip and Knee	7
Knee	21
No Pain	1

Uptake and attrition

The uptake of the programme was generally good although varied between organisations. It was raised whether

the service was reaching those most in need of it as some felt those with office jobs or more flexible roles were more likely to access the service. Consideration should be given to making the service as accessible as possible to ensure those from all roles within the workforce feel able to attend.

Overall JPA attendance and completion rates were high, possibly because participants were motivated and self-referred themselves to the service. Withdrawals usually occurred after participants attended the first appointment (table 3).

A higher number of participants withdrew in London compared to Cornwall.

Table 3	Baseline	Retention					
		3-week review		6-week review		6-month review	
Location	n	n	%	n	%	n	%
Total	481	382	79	323	67	257	53
Cornwall	277	225	81	206	74	180	65
London	204	157	77	117	57	77	38

Table 3 shows all appointments completed

One site reported a high number of missed appointments because employees were not released from work to attend appointments (reasons for this unknown) or these were offered at inconvenient times. An engaged Link Contact and flexible appointments appear to reduce missed appointments, avoiding wasted time, effort and resources. A variety of reasons was given for withdrawal (listed below), several of these (*italicised*) could be avoided if potential participants receive better verbal and written information about JPA – who it was for, what it entailed, and the commitment required from the participant.

- *found to be ineligible at the first appointment*
- *too busy - family commitments, personal circumstances, time commitment*
- *expecting something else*
- *a quick fix, not the burdensome commitment*
- *a more clinical intervention*
- *to see GP or physiotherapist*
- *service doesn't feel right for them*
- *didn't believe service would be beneficial*
- other health issues became a priority
- joint improved
- conflicting messages with GP
- Advisor advised participant to see GP or physiotherapist
- already receiving support
- no reason given

Managing the expectations of participants by providing clear information about JPA before sign up or attending the first appointment could improve adherence and reduce the number of individuals missing appointments or withdrawing from JPA.

Clinical outcomes

At all timepoints, there were significant improvements in pain, function, disability and physical activity (Table 4).

Participants found they were able to exercise when they previously hadn't been able to, they had greater self-confidence, were sleeping better and felt their general wellbeing was better. They attributed these improvements to the ethos, content and format of JPA.

Table 4 Variable	n	Baseline	Review	Change (CI)	Effect size	Improvers	
			3 week			n	%
MSK-HQ	381	32.4	38.1	5.7 (5.04 - 6.41)	0.84	303	80
Pain Scale*	373	5.6	4.5	-1.1 (-1.29 - -0.90)	0.57	229	61
Sit-to-stands	360	11.5	13.5	2.0 (1.49 - 2.46)	0.42	234	65
Days of physical activity	374	2.8	3.7	0.9 (0.72 - 1.13)	0.45	195	52
Physical function*	374	4.7	3.7	-1.1 (-1.27 - -0.87)	0.54	228	61
Work and daily routine ¹	381	2.5	2.8	0.3 (0.25 - 0.43)	0.39	156	41
Emotional wellbeing ²	381	2.6	2.9	0.3 (0.24 - 0.42)	0.36	145	38
	n	Baseline	6 week	Change (CI)	Effect size	n	%
MSK-HQ	322	32.8	40.5	7.8 (6.90 - 8.61)	0.99	268	83
Pain Scale*	319	5.5	3.9	-1.6 (-1.77 - -1.32)	0.74	208	65
Sit-to-stands	311	11.7	14.5	2.8 (2.22 - 3.40)	0.53	229	74
Days of physical activity	320	2.8	3.7	0.9 (0.65 - 1.13)	0.41	174	54
Physical function*	319	4.6	3.2	-1.4 (-1.66 - -1.19)	0.67	215	67
Work and daily routine ¹	322	2.5	3.0	0.4 (0.33 - 0.54)	0.47	135	42
Emotional wellbeing ²	322	2.7	3.2	0.5 (0.41 - 0.62)	0.52	151	47
	n	Baseline	6 month	Change (CI)	Effect size	n	%
MSK-HQ	251	33.4	42.8	9.5 (8.33 - 10.58)	1.04	217	86
Pain Scale*	254	5.3	3.4	-1.9 (-2.22 - -1.66)	0.85	181	71
Sit-to-stands	244	11.7	14.8	3.1 (2.29 - 3.85)	0.50	171	70
Days of physical activity	256	2.9	3.5	0.7 (0.40 - 0.96)	0.30	121	47
Physical function*	255	4.6	2.6	-1.2 (-2.23 - -1.69)	0.89	186	73
Work and daily routine ¹	251	2.6	3.2	0.6 (0.50 - 0.74)	0.64	129	51
Emotional wellbeing ²	251	2.8	3.3	0.5 (0.40 - 0.66)	0.49	121	48
Confidence to self-manage	256	5.5	7.8	2.3 (1.95 - 2.61)	0.85	200	78

(CI) – 95% Confidence interval; we can be 95% confident that the average change falls within this range

MSK-HQ - the minimal important change for the MSK-HQ is considered to be 5.5 points¹⁶

* - lower scores better; all other variables higher scores better

¹ MSK-HQ Question 6 – Work/daily routine: How much have your joint or muscle symptoms interfered with your work or daily routines in the last 2 weeks (including work and jobs around the house)?

² MSK-HQ Question 11 – Emotional wellbeing: How much have you felt anxious or low in your mood because of your joint or muscle symptoms in the last 2 weeks?

Please note: the MSK-HQ is scored on a range of 0-56, with a better score indicating better MSK-HQ health status. Questions 6 and 11 have been highlighted in this report as of interest and relevant to this project.

Effect size - the difference between two groups, an effect size of around 0.2 would be considered a 'small' probably trivial difference people wouldn't be aware of, an effect size around 0.5 represents a 'medium' difference that might affect people's lives, an effect size around 0.8 would be considered a 'large' change that people would be aware affects their lives.

Participants reported pain and physical function on a scale of 0-10. To look at the severity of pain and its impact on physical function the scale was divided into mild, moderate and severe as follows:

0-2 = mild, 3-7 = moderate, 8-10 = severe

The pain scale reflects 0 = no pain and 10 = the worst pain ever had therefore responses of 0-2 would indicate mild

pain etc.

The physical function scale reflects 0 = no problems and 10 = unable to do anything therefore responses of 0-2 would indicate a mild affect/impact on the ability to do normal activities at home or leisure etc.

Pain severity participants experienced changed from being moderate to severe to being moderate to mild after JPA, and functional limitations reduced from moderately affected to being mildly to moderately affected (table 5).

Table 5	Mild	Moderate	Severe
Pain severity	n (%)	n (%)	n (%)
Baseline	35 (7)	371 (78)	72 (15)
3-week review	85 (23)	255 (68)	36 (9)
6-week review	99 (31)	201 (63)	21 (7)
6-month	110 (43)	135 (53)	11 (4)
Functional limitations			
Baseline	77 (16)	371 (77)	31 (6)
3-week review	124 (33)	236 (63)	16 (4)
6-week review	138 (43)	170 (53)	13 (4)
6-month	142 (55)	107 (42)	7 (3)

Healthcare Utilisation

The type and amount of healthcare that participants used was self-reported at baseline and 6 months. We did not have the resources to corroborate this information with individual participant medical records however, in this relatively young age group, for a slowly progressive condition like joint pain, where investigations, interventions and medications are relatively few, self-report is reasonably accurate¹⁷.

People reported fewer workdays lost and fewer GP consultations in the 6 months during JPA compared to the 6 months before starting JPA (table 6).

Table 6	n	6 months before Baseline	Baseline to 6-month review
Days absent	247	4.1	2.0
GP consultations	240	1.2	0.5

At the baseline of 399 participants, 108 (27%) had no investigations in the previous 6 months, 291 (73%) reported having some form of investigations (Table 7).

At 6-month review 163 (71%) participants reported having no investigations and only 67 (29%) reported having an investigation (table 7).

Table 7		
Interventions (e.g. x-rays, scans, consultations, treatment)	6 months before baseline	Baseline to 6 month review
	n (%)	n (%)
None	108 (27)	163 (71)
Investigations	25 (6)	3 (1)
Medical consultations	29 (7)	12 (5)
Physiotherapy	90 (23)	24 (10)
X-ray/scan + consultation	147 (37)	28 (12)
<i>Total</i>	<i>291 (73)</i>	<i>67 (29)</i>
	<i>399 (100)</i>	<i>188 (100)</i>

Fewer people had fewer investigations (x-rays, scans), consultations or treatment from a doctor or physiotherapist in the 6 months after starting JPA compared to the 6 months before JPA (table 8). People who had an intervention before starting JPA reported fewer interventions during JPA.

Table 8			
Number of interventions at baseline	n (%)	Number of interventions at 6 months	n (%)
0	108 (23)	0	163 (65)
1	152 (32)	1	48 (19)
2	114 (24)	2	16 (6)
3	78 (16)	3	19 (8)
4	25 (5)	4	3 (1)
<i>Total</i>	<i>477 (100)</i>	<i>Total</i>	<i>249 (100)</i>

Medication

Most people (81%) were taking some form of medication when they started JPA (table 9).

Table 9	
Taking Medication at baseline	n (%)
No	90 (19)
Yes	384 (81)
<i>Total</i>	<i>474 (100)</i>

At the end of JPA, fewer participants reported taking medication (56%).

Of those taking medications at baseline fewer were still taking medications at 6 months (table 10).

Table 10		
Taking	Taking	n (%)

medications at baseline	medications at 6-month	
No	No	44 (86)
	Yes	7 (14)
Yes	No	64 (33)
	Yes	130 (67)
	<i>Total</i>	<i>245 (100)</i>

The number of medications participants were taking decreased after participating in JPA (table 11).

Number of medications taken at baseline	Number of medications taken at 6 months	n (%)
0	0	46 (79)
	1	11 (19)
	2	1 (2)
	<i>Total</i>	<i>58 (100)</i>
1	0	59 (35)
	1	99 (58)
	2	12 (7)
	<i>Total</i>	<i>170 (100)</i>
2	0	6 (32)
	1	7 (37)
	2	6 (32)
	<i>Total</i>	<i>19 (100)</i>
	<i>Total</i>	<i>247 (100)</i>

The number and proportion of participants taking medication frequently (daily, weekly) decreased (table 12 & 13).

Frequency of medication at baseline	n (%)	Frequency of medication at 6 months	n (%)
Hardly ever	48 (13)	Hardly ever	27 (20)
Once or twice a month	77 (20)	Once or twice a month	29 (21)
Once or twice a week	105 (28)	Once or twice a week	42 (30)
Every day	150 (39)	Every day	40 (29)
<i>Total</i>	<i>380 (100)</i>	<i>Total</i>	<i>138 (100)</i>

Frequency of medication at baseline	Frequency of medication at 6 months	n (%)
	Hardly ever	4 (50)

Hardly ever	Once or twice a month	1 (13)
	Once or twice a week	2 (25)
	Every day	1 (13)
		8 (100)
Once or twice a month	Hardly ever	12 (41)
	Once or twice a month	6 (21)
	Once or twice a week	9 (31)
	Every day	2 (7)
		29 (100)
Once or twice a week	Hardly ever	5 (14)
	Once or twice a month	11 (30)
	Once or twice a week	17 (46)
	Every day	4 (11)
		37 (100)
Every day	Hardly ever	4 (7)
	Once or twice a month	10 (18)
	Once or twice a week	10 (18)
	Every day	31 (56)
		55 (100)
Total		129 (100)

The number of people taking prescribed and over the counter medication decreased after participating in the JPA service (table 14).

*OTC – over the counter

Type of medication at baseline	Type of medication at 6 months	n (%)
None	None	46 (79)
	OTC	8 (14)
	OTC & prescribed	1 (2)
	Prescribed	3 (5)
		58 (100)
OTC	None	46 (38)
	OTC	64 (53)
	OTC & prescribed	5 (4)
	Prescribed	5 (4)
		120 (100)
OTC & prescribed	None	6 (32)
	OTC	4 (21)
	OTC & prescribed	6 (32)
	Prescribed	3 (16)
		19 (100)
Prescribed	None	13 (26)
	OTC	14 (28)
	OTC & prescribed	7 (14)
	Prescribed	16 (32)
		50 (100)

Qualitative data: participant feedback

Participant feedback was collected in many ways including interviews and focus groups, the NHS friends and family test and an online survey. Participants described how they valued talking to an Advisor about their problems during one-to-one, unrushed appointments, they felt listened to and the advice they received felt personally relevant. The topics most useful were helping participants understand pain better, dispelling myths around pain, being realistic about what they could do and pacing themselves better. Participants were very satisfied with the JPA service's format, content and benefits. They felt the workplace was an acceptable place for JPA to be offered and appreciated the convenience of it being there and not having to take time out of work.

NHS Friend and Family Test

Participants were asked to complete the NHS Friends and Family Test at their 6 month appointment. 91% of participants who attended their final 6 month appointment (n=254) said they would be likely or extremely likely to recommend the Joint Pain Advice service to their friends and family.

Participants leaving comments about why they would recommend the service noted the useful information and advice provided, in particular the importance of physical activity. Participants appreciated the time and opportunity to think about and focus on their pain management and what they could do to self-manage in a supportive, non-judgemental environment. Goal setting and encouragement from Advisors was also valued.

"A great positive encouragement to make changes. I feel so great now and JPA helped me reach my goals"

"... I have found the advice and support realistic and non-judgemental..."

"I found that part of the benefit of this was just talking about my pain and having the discussion about managing it rather than a discussion at the GP which would normally just tell me to take pain killers until better"

"Been really helpful to have the opportunity to see what works for me. Motivational to have someone support me"

"Very understanding and offering different ways of thinking about/approaching the pain and its effects"

"Because it is empowering and encourages you to do more to help yourself"

"I am now more active than before and this has helped my mental wellbeing - Thank you!"

"I have experienced much less pain and my general health has improved"

"I feel that somebody is taking it seriously"

"I feel supported"

"very helpful information and support"

"I have learnt new ways of how to self-manage and reduce the pain I have"

Whilst the majority of comments left provided positive feedback there were some non-benefit statements captured. These related to feeling that the information provided was not new to them and believing that a medical professional approach would be more appropriate to manage pain. Some felt that the structure of the appointments was too spread out and therefore there was no incentive to reach goals.

Survey

Participants were also invited to complete an online survey. There were 132 responses from 453 (29%) participants taking part in the JPA service. In summary:

- 92% would recommend JPA to a colleague
- 94% considered the Advisor was very/fairly knowledgeable
- 91% felt the time spent with the Advisor was 'about right'
- 77% thought the number of appointments was 'about right'
- 51% preferred to JPA in their workplace – “for convenience”, “don’t have to take time off”
- 3% prefer JPA away from work – “felt more relaxed”, “privacy”
- 79% were very/fairly confident in their ability to manage pain better, of whom 93% attributed this to JPA
- 62% said JPA had changed the way they did things at work

Focus groups and interviews

Participants were invited to take part in a phone interview and for some sites a focus group. Discussion guides were used to facilitate both. The majority of participants in focus groups and interviews were mainly from one specific model (peripatetic). Participants’ reasons for using the JPA service varied. The most common reasons mentioned included exploring ways to manage their condition better and options they might not have been aware of, reflecting a desire to help themselves. Some felt dissatisfaction with care they had received previously feeling that their problem was not being understood or taken seriously or was a temporary solution. Some participants attended as they felt they had tried everything else. The fact that JPA was being offered as a free service at work making it convenient and accessible was also a reason for attending.

The impact of JPA was varied and wide ranging. Participants commented on behaviour changes that they had made because of JPA and the impact these changes had on them. Most commonly participants spoke about their increase in physical activity, weight loss and how they resumed activities they enjoyed but had previously not been doing due to the fear of pain or making the pain worse. They also spoke about changes they had made at work including moving more, changing positions, being more aware of taking breaks and feeling more empowered to ask for adjustments at work. Whilst difficult to assess the impact on productivity comments provided suggests their conditions are having less negative effects on their work than previously. A reduction in pain and the use of painkillers was one of the main impacts that participants spoke about, including a change in the way they thought about pain and the importance of this change to them.

Attending JPA sessions supported participants with the motivation to make changes. JPA advisors helped participants to set realistic goals and stick to them and were seen to be very good at motivating, with follow up appointments (reporting back to the Advisor) and the ability to see evidence of progress through changes in their outcome measures acting as a motivator. Participants had a positive view about JPA being offered in the workplace. They appreciated that they did not have to travel for the service making it convenient, time efficient and it fitted easily into the working day.

Whilst the great majority of feedback was positive and participants had a positive experience this wasn’t true of everyone. Some participants felt that the JPA appointments weren’t what they were expected. They had thought the sessions would be more clinical and/or hands on. In some workplaces, JPA was referred to as a ‘JPA clinic’ and/or offered by physiotherapists which may have contributed to these expectations. It was also mentioned that there was too much of a focus on weight management, a topic which had been discussed already with other health providers. Participants would have liked more flexibility with appointment times and spacing.

Qualitative data: Employer and Advisor experience

Feedback from Advisors, managers and the main ‘link contacts’ was gathered through project meetings, interviews

and focus groups. Discussion guides were used to facilitate interviews and focus groups. The motivation to run JPA was to improve an organisation's current offer and to address wellbeing, productivity and help with self-management of conditions. Workplaces recognised musculoskeletal health as a problem and wanted to address this. JPA was seen as a way of benefitting the health and wellbeing of staff. For those offering in-house MSK support, JPA was seen as a possible way to address demands on these services and people using these multiple times. In addition, it was thought that the holistic approach and message of self-management could help support employees, absence and loss of productivity whilst also being an efficient use of limited resources.

Partner organisations saw JPA as an extension to their existing services, adjusted existing referral pathways, developed structured appointments and created 'packs' given to participants during the appointments. As with most innovations, organisations felt the implementation of JPA in house required extra work. Link Contacts felt that the workload associated with this role was not too heavy. Challenges mentioned including making staff aware of the service, attendance at appointment, supporting staff to feel they had permission to attend in work time and following up with participants.

The main obstacle to delivering JPA was Advisor time and capacity given their existing workloads. Annual leave, sickness and reorganisation exacerbated capacity to support JPA. Issues with appointment bookings tended to occur if an organisation was not fully committed to the service and had not implemented clear referral pathways and booking procedures when setting up the service. Initially, some baseline appointments took 45-60 minutes to complete the assessments and paperwork etc. but this later reduced to 30 minutes when Advisors became familiar with the service. Once up and running many absorbed the new service and were happy with it. Most appointments were face-to-face. Some organisations tried to deliver some reviews by phone if they thought these would be more convenient or if appointments were difficult to arrange. This required the questionnaires to be sent out, completed by participants and returned to the Advisor before the phone call so that it could be discussed during the appointment. Unfortunately, participant's compliance was erratic, and eventually, Advisors were only offering phone consultations to participants who were very engaged or were unable to make a face-to-face appointment. Even if phone consultations were delivered Advisors felt the next appointment should be face-to-face as this was a better experience.

The timing of the consultations and nature of participant's work sometimes posed challenges. Mobile workers based across several sites, with variable working days, shifts and/or on-call duties made appointments difficult to arrange. This was more problematic with the peripatetic advisors as they booked specific days and times to attend the workplaces which reduced flexibility. The rationale behind JPA review timings was to support participants during the early stages of difficult behavioural change and wean them off the service with a longer gap between later reviews. In addition, short intervals between the initial, 3- and 6-week reviews made fitting them into busy workloads difficult. Some participants found the short intervals at the start made them feel supported while they were trying to nurture healthier lifestyles. Others suggested slightly longer time intervals between the first 3 appointments. Participants also commented that the gap between the 3rd (6-week) and final appointment (6 months) was quite long. To address this Advisors often offered email support and/or provided telephone support between the 6-week and 6-month appointments to remind, prompt and keep participants on track. It was generally felt appointment timings needed to be more flexible to ensure the service was effective, participants felt supported but also ensure the service is workable from an employer's perspective.

Participants expectations of the service affected their engagement with JPA and their judgement of its success. It was important to understand and manage these expectations. Although some individuals came expecting a "quick fix", the majority understood the need for effort and commitment on their part and were positive and realistic

about the service. However, many had been ill-informed about the service. Some came along because they were told they to, some expecting to see a doctor or physiotherapist, and some thought JPA was for a one-off appointment rather than four sessions. Advisors were often asked questions about other medical conditions and had to be very clear they could not advise outside of the scope of the JPA service, signposting people to other healthcare professionals instead.

Workers who considered the nature of their work caused their pain could be reticent about bringing this up because it might impact negatively on their employment. This raised concerns about how to address these issues with employers. For small companies, there were issues around confidentiality and anonymity, which was less of an issue in larger organisations with Occupational Health Departments. This questions whether Advisors can act as advocates for participants needing adaptations to the workplace environment or practices. Difficult issues involving confidentiality and anonymity could be addressed by couching feedback in general terms and grouping of similar workplaces/work roles.

Overall Advisors also found JPA rewarding. They thought employing motivational interviewing and other behavioural change techniques helped participants understand and engage with healthy lifestyles. They enjoyed delivering JPA, learnt a lot from the training that they applied in other aspects of their work and saw it as an extension of services already provided.

Key benefits from the Advisor's point of view were:

- reaching new users who had been struggling
- longer sessions than in their other practice
- one-to-one, tailored support
- less medicalised
- credible because of links to hospital
- integrated with other offers
- enhanced professional skills
- positive outcomes and feedback for participants
- reflected positively on the employer as caring for their employees

The main negatives were:

- the rigidity of timing of sessions
- would have liked exercise videos

Costs

The cost of delivering JPA depends on who is providing the appointments and who is doing the administration i.e.

the current role of the individual. The cost of delivery by a freelance professional depends on their existing fee. Consideration needs to be given to the cost of providing the initiative (sessional or per appointment) and any additional associated costs. Costs to consider include:

- Training - training fees, attendance travel costs, Advisor time
- Implementation - time required to meet, consider and set up referral pathways and promote service etc.
- Delivery – salary of Advisor for four x 30 minute appointments, administration time, printed participant handbooks and any other resources (could be provided electronically), venue costs and travel costs if applicable e.g. if Advisors travel to multiple locations
- Participant time off - releasing a member of staff to attend up to four x 30 minute appointments

Whilst it was not possible to calculate the overall cost of providing the JPA service, an estimated cost of delivery to one participant is suggested below (please note that this does not include all associated costs).

For the cost of delivery to participants (once JPA is implemented) costs to consider include:

- Delivery of up to four 30 minute appointments per participant = 2 hours of staff time
- Administration tasks = 30 minutes of staff time per participant
- Supervision/management of Advisor and administrator = 15 minutes of staff time per participant
- Venue cost – variable, if applicable
- Cost of printing/buying resources – these could be provided free electronically
- Travel time and costs – if applicable

For example (based on Agenda for Change NHS pay scales (at entry point) for inner London, incl. 23% on-costs):

Band 6 Advisor, 2 hours	= £54.39	
Band 4 administration, 30 mins	= £ 9.50	
Band 7 supervisory role, 15 mins	= £ 8.26	Total = £72.15 per participant (+ venue cost and travel cost)

For example (based on Agenda for Change NHS pay scales (at entry point) outside London, incl. 23% on-costs):

Band 6 Advisor, 2 hours	= £46.76	
Band 4 administration, 30 mins	= £ 8.16	
Band 7 supervisory role, 15 mins	= £ 7.25	Total = £62.01 per participant (+ venue cost and travel cost).

How these costs compare with other similar interventions is unclear as there is nothing similar to JPA. A 9-minute GP consultation costs £33¹⁸ and although GPs often give people advice to lose weight and take exercise this is not sufficient to give people effective stimulus to help them adopt healthier lifestyles. Four 9-minute GP consultations would cost £132. Physiotherapy (Band 6) costs £23.50¹⁸ for a 30-minute assessment, 4 sessions = £94. Often physiotherapy management aims to reduce symptoms, rather than affecting behavioural change.

For an investment of £72 (plus venue costs, plus travel and travel time costs for peripatetic Advisors) employer and societal returns include one less sick day, one less GP appointment, less time off work for investigations, interventions and fewer over-the-counter/prescribed medications and their possible side-effects.

Conclusion

In this study people from a range of healthcare and non-healthcare professions were trained to give people with chronic back, knee and/or hip pain advice about how to self-manage their pain-related problems in their workplace. We have shown Joint Pain Advice can be delivered in large organisations and small and medium sized enterprises,

to reduce pain, improve physical, mental and social health and wellbeing, reduce absenteeism, use of healthcare services, and it is relatively inexpensive.

To successfully implement JPA employers and employees need to understand the commitment involved. Initial discussions and set-up time can be significant, and employers need to consider how they will raise awareness of the service, how they will set up referral pathways and develop resources to support the service. Advisors need time to deliver JPA, to avoid overburdening staff often running at, or near, full capacity. There is also a commitment for employees to be given time off work to attend appointments which need to be agreed by line managers.

To support participants trying to become more active and lose weight, we suggested the Advisor should see participants frequently in the early stages, at baseline then three and six weeks later, and then after about four and a half months. However, appointment timings need to be flexible to accommodate personal preferences, the nature of people's jobs and organisational working practices. The aim should be to provide a service that supports people to adopt healthy behaviour change by fitting with the employee's and employer's personal preferences, working patterns and practices with minimal disruption.

Having a dedicated and committed "Link Contact" or JPA lead is essential for success in both models. They are the main contact between employers, Advisors and participants. They enable effective, efficient, successful service delivery, ensuring employers, management and employees know about JPA (facilitating recruitment), who it is for (avoiding inappropriate referrals), what the service involves (maximising retention) and ensure people have realistic expectations of the service. In large organisations, this may be the Advisor, which works particularly well if they are based in Occupational Health. However, several small and medium sized enterprises could share a peripatetic "roving" Advisor with an individual acting as a Link Contact at each workplace. Although costs vary depending on who is delivering the intervention, neither model is expensive and the costs should be recovered through reduced absenteeism from a healthier happier workforce.

Learning

- Participants were very satisfied with the JPA service's format, content and benefits and felt the workplace was an acceptable place for JPA to be offered.
- JPA had wide benefits that participants attributed to the ethos, content and format of the service
- The peripatetic model provides the opportunity to deliver JPA to smaller workforces who may otherwise not be able to accommodate the service and requires a good Link Contact to work most efficiently
- Adequate time, effort and resources are required to offer JPA to the employee. The capacity of an Advisor needs to be considered and administration time and adequate resource allocated to ensure delivering JPA does not increase the workload for the Advisor and appointments are readily available to those who would like them which will, in turn, provide a better service.

- Clear referral pathways should be established early to ensure the smooth running of the service which will create support, increase uptake, reduce staff time to manage it and improve participant/employee satisfaction.
- Clear communication and promotion of JPA (what it is (not), who it is for, commitments etc.) ensure appropriate participants attend the service and manages expectations which may improve adherence (reduce missed appointments and drop-outs), improve outcomes and avoid wasted time for the Advisor, participant and workplace.

- Managing participant expectations is very important to improve adherence, retention and outcome. Good knowledge of the service by those involved with the promotion and the booking of initial appointments is required to ensure accurate information is provided and understanding checked before starting.
- Advisors should be prepared with information about relevant services which could provide the opportunity for further support to self-manage their joint pain in the long term and ensures it is provided within the boundaries of the JPA role and the Advisor.
- JPA is a flexible model and workplaces should consider the ways they could adapt the model to accommodate their needs. The flexibility of appointments may be required to accommodate the nature of people's employment (duties, roles, mobile workforces), workplaces contextual factors and personal preferences to support behaviour change.
- Supportive employers are vital to enable a successful service to ensure employees feel able and supported to access JPA and to ask for additional support such as reasonable adjustments to support them in their work.
- Telephone consultations were possible, but less effective and provide a different experience. Consideration should be given to data collection requirements and the needs and engagement of the participant if delivered in this way.
- As a result of the Covid-19 pandemic, some 6 months appointments were offered by telephone or video consultation. Whilst earlier telephone appointments were less successful, this appears to have been acceptable to both participants and Advisors and offered more flexibility within the peripatetic model.
- Protecting employee's confidentiality and anonymity can be problematic but is essential to facilitate their engagement

Strengths

This was a rapid, realist evaluation of a service (JPA) that gave people with chronic knee, hip and back pain evidence-based management in their workplaces under "real world" constraints and pressures. We recruited a representative working population from each organisation. The findings are in line with the findings of several of our previous studies^{5,6}

These factors suggest the benefits of JPA may be generalisable to other workplaces, although each will have unique challenges.

Limitations

Several limitations need to be considered when implementing JPA in a workplace setting:

- All the participants chose to attend JPA, there was no control group or randomisation procedure so those volunteering may be "biased" in favour of JPA, engage with it better and may have been more likely to report better positive outcomes, inflating the treatment effect
- The number of people in the study was small, and a larger number of people is required to substantiate the findings
- The number of people returning for review appointments declined throughout the study due to
 - delayed start preventing us from following up with all participants by the end of the study
 - participants often withdrawing from the study after 1 or 2 appointments because they felt they had received enough advice in these initial appointments. We do not see this as the failure of an ineffective intervention, but rather people self-managing their problem (choosing what help they need and when they needed it) as JPA aimed to do. Instead of creating interventions that arbitrarily

determine when people access help, we need to create flexible, accessible, efficient services people can easily access

- If participants choosing to withdraw from JPA had poorer outcomes and those staying on JPA had better outcomes this differential withdrawal will have inflated the treatment effect of JPA. We have no evidence that differential withdrawal was evident
- Workplaces vary greatly in the nature of the work, working practices, culture, etc. and the improvements reported may not be replicated in workplaces that vary from those reported
- Employers who do not follow the requirements needed for successful implementation of JPA and “cut corners” are unlikely to see the improvements replicated

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