Supplementary file 2. Consultation phase methods and results

Methods

Workshop 1

The aim of this workshop was to define what content healthcare professionals want from a resource supporting conversations on physical activity. The approach and questions were informed by a scoping review of the context of physical activity conversations in healthcare and deliberately kept open to avoid biasing responses. Prior to the workshop a narrative evidence review was undertaken on physical activity in inflammatory rheumatic disease and distributed to the group prior to the workshop.

The workshop was undertaken at a regional meeting for healthcare professionals specialising in the management of inflammatory rheumatic disease in England. 32 attendees came from 8 different rheumatology services regionally and compromised consultant rheumatologists, specialist registrars, specialist nurses, specialist physiotherapists, clinical academics and research nurses. In addition, four patients attended from the local patient group of the National Rheumatoid Arthritis Society.

The workshop was split into three sessions and the attendees were split into four mixed discipline groups, with a patient representative and facilitator allocated to each.

Session 1

The following question was put to the groups:

- *What are the main headings that should be included in a resource to support your conversations on physical activity? Please list 5 and prioritise them*

Session 2

The following headings were identified from session 1 and shared across the four groups in session 2. Each group presented how they felt a particular heading should be addressed prior to group discussion on each section.

- *Benefits and how to frame the messages around them*
- *Safety messages including risk of harm*
- *Directive messaging*
- *Myth busters*

Session 3

All groups worked on the following questions during the final session and results were recorded by a group scribe:

- *What types/ categories of activity should be recommended?*
- *What practical aspects of activity should be addressed for people with inflammatory disease?*
- *What recommendation should be made?*
- *What would be an appropriate title?*

Following the workshop, summary points were shared with the group for further comments via email.

Workshop 2

Workshop 2 built on conclusions made in workshop 1, aiming to refine the content valued by clinicians in the resource. Workshop 2 was undertaken at a regional meeting for healthcare professionals specialising in the management of musculoskeletal pain in England. 34 people attended the workshop, representing a broad range of healthcare professionals in the care of

musculoskeletal pain including pain consultants, sport and exercise medicine consultants, specialist registrars, specialist physiotherapists, specialist nurses and patient representatives.

As with workshop 1, a narrative evidence review of physical activity in musculoskeletal pain was shared with attendees prior to the meeting. Attendees were split into four groups and the workshop was split into the following sessions:

Session 1

This session was split into two phases. In the first, all groups were asked to consider the following question:

- *What are the most important physical activity questions to address during a clinical consultation? Please list five and prioritise them*

Subsequently the groups considered the following questions separately prior to presenting to the other groups:

- *Groups 1 and 2 – What key information should clinicians relay to patients with MSK pain about physical activity? Please list the 5 points you feel are most important*
- *Groups 3 and 4 – What key information would a patient with MSK pain like to know when discussing physical activity with their clinician? Please list the 5 points you feel are most important*

Session 2

During this session individuals broke from group work. They were given a series of stickers with statements on them taken from the qualitative and quantitative evidence review. Posters defining the six key areas for the resource identified during workshop 1 were displayed around the room. Participants stuck the stickers to relevant areas of the resource and rated the item 1-5 according to their opinion on the importance of the statement. The rationale for this was to identify where

specific components should sit in the resource and how they should be prioritised. The action areas were:

1. *Physical activity history*
2. *Why PA – Benefits*
3. *Why PA – Mechanisms*
4. *Risk and Safety*
5. *What to do & where*
6. *Condition specific advice*

Posters were collated, and summary statement distribution and weighting analysed.

Session 3

This session was split into two tasks:

- *What specific messages would help you counsel patients on physical activity? E.g. Cycle of decline/mechanisms, aerobic vs resistance vs both, motivators/barriers, CMO guidance, general health physical activity benefits, Others*
- *Are there any safety considerations we need to include? E.g. co-morbidities, significant adverse events, how do we frame any safety messages?*

Each task was opened to facilitated discussion after group work. Results from this workshop informed the development of the draft resource for phase 1 of the Delphi study.

Results

Workshop 1

Background work from the narrative evidence review was shared with the group prior to the workshop and presented along with the aims of the project at the start of the session on 2nd November 2017.

Session 1

What are the main headings we should have on this infographic? Please list 5 and prioritise them

Key headings were defined by groups, ranked and shared. Agreement levels were high on the most important components, but participants found it very hard to rank them as they felt they should all feature.

Table 1. Key headings identified in session 1, workshop 1 with rankings

Core component	**Ranking of importance**
Benefits including symptoms (positive and negative)	1st equal
Directive message & myth busters	
Safety messages	
Type of activity (including what counts, practical suggestions, logistics)	2nd equal
Tools and resources to give to patients	
Define Categories of activity – Medically framed reflecting disease activity	
Current activity levels and recommendation	3rd equal
Physical activity history	
Perceived barriers and negative aspects e.g. financial /access /time	

The group were adamant that all these components needed to be included when challenged about how they would fit into a single infographic, as was the intention of the project at that stage. This was a strong suggestion that the objective of producing disease specific infographics was unlikely to be able to deliver what clinical staff and patients want in clinical practise to support physical activity

consultations. A further suggestion from this session was that the resource should prompt clinicians to think about what their patients would like to do.

Session 2

Consensus on key components for each topic heading was achieved through moderated group discussion.

Benefits

Specific:

- Fights fatigue (no. 1 symptom)
- Combats pain
    - Natural pain killer (Equivalent to medication)
- Promotes independence
    - Improved Function
    - More mobile
    - Stronger
- Tackles stiffness
- Live Better and Longer
- Reduces Co-Morbidities

General:

- Self esteem
- Depression (mood)
- Promotes restorative sleep

Safety messages including risk of harm

N.B. A strong emphasis was made that safety messages should be positively framed

- No evidence of harm

- Doesn't damage joints
- Works well with medicine you take
- Additional considerations:
    - Avoid strenuous exercises during acute flares
    - Progression in duration of activity should be emphasized over increased intensity
    - Adequate warm up and cool down can help minimise pain
    - Discomfort during or immediately after exercise can be expected and does not mean your joints are being further damaged
    - Encourage individual with Arthritis to exercise during the time of day when pain is typically least severe and in conjunction with peak activity of pain medication
    - Appropriate shoes and clothing

Directive messaging & 'myth busters'

Important messages were grouped into themes:

- Start at low level and build up gradually (Reassurance - build your confidence - 'Do your best', Do the best you can)
- Enjoyment (Make it fun, it can be fun, do it with friends)
- Personalisation enable advice specific to patient (realistic/tailored 'Something for everyone'/Start somewhere/Something is better than nothing)
- PA in context of your treatment – core component, as good as medicines
- Don't worry if it hurts - hurt doesn't mean harm
- Find something you like – Range of PA ideas, redefine what exercise is – PA not exercise, Find a (virtual)friend)
- Empowerment message: 'take control' 'get back function'. Permission to get back to 'normal' activity ('Restart'- but need to be careful it's not too positive!)

- Tailored PA level advice – what do they want? - 'start somewhere' Something is better than nothing'

Session 3

All groups worked on the following questions during the final session:

What types/ categories of activity should be recommended?

- Walk
- Climb stairs
- Cycle
- Swim
- Nordic walking
- Yoga
- Pilates
- Tai chi
- Carry bags
- Bowls
- Golf
- Specific muscles e.g. quads
- SARAH exercise (hand exercise from physiotherapist and OTs)

What practical aspects of activity should be addressed for people with inflammatory disease?

- Anything and Everything: Examples:
    - Variety of types of activity (including day to day) (e.g. Shopping bag, gardening, stairs)
    - Individual or Group based
- Intensity message
    - Talk test, pulse rate, sweaty
- Time: Start with 5-minute bouts building up ten

- Local, enjoyable, affordable
- Joint specific advice (see patient education)

What recommendation should be made?

- Strong opinion emerged against using the 150-minute recommendation as this was felt to be a significant barrier when talking to patients
- Challenge 5 - ask patient to do an additional 5 minutes on top of what they currently do.
- Ask patients what they can agree to do (not using the word commit) that day to start the change.

What would be an appropriate title?

The most popular title was voted as "Physical Activity for People with inflammatory Rheumatic Disease". Debate focussed around how specific the title should be and it was decided that a title that spoke specifically to the patient group would add weight and importance for clinicians and patients. Further suggestions included:

- Get going
- Moment to move
- Rheum to improve/move
- Benefit of PA for people with rheumatic conditions
- Get off your R's
- Jiggle your joints
- Get up and go

Conclusions from Workshop 1

The group were adamant that the full range of topics recorded above need to feature in the resource to make it valuable to clinical practise. A resource that cut out important information due to an arbitrary design consideration would significantly reduce usefulness and uptake amongst

clinical staff. The discussion was taken to the design team and Moving Medicine working group and a decision made to deliver an interactive website rather than a series of infographics.

Promoting patient centred decision making was emphasised as something that people find difficult when influencing physical activity behaviours. The group would value guidance on this in the resource as well and were not familiar with published behavioural change frameworks like the 5As (NICE, 2014a).

Following the workshop, the key themes and core content was built into the brief for workshop 2 with the aim of testing the ideas amongst another group of clinicians and moulding the shape of the resource.

Workshop 2

Building on workshop 1, workshop 2 was undertaken on 6th December 2017 with a multidisciplinary group of healthcare professionals specialising in musculoskeletal pain management. As with workshop 1 evidence summaries were presented to the group prior and at the start of the session. Participants were advised that the objective was to create a website to support physical activity consultations.

Session 1

What are the most important physical activity questions to address during a clinical consultation and what are patient and clinical priorities?

Between the groups a wide range of questions and priorities were identified. The group declined to prioritise questions emphasising that all components were equally important to be included in the resource. Groups concentrating on patient perspectives emphasised symptoms and the challenges of behaviour change whilst clinician perspectives also reported the importance of meeting expectations and restraints of practise. Responses included:

- Current activity and physical activity history

    - Previous attempts
    - Enjoyment
    - FITT
- Life goals
    - Values based
- Current understanding
    - Benefits
    - Recommendations
    - Local resources
        - Pathway and follow up
    - What is physical activity?
- Behavioural change stage
- Personalise pathway options
- Risk/safety
- Motivators
    - Symptom based
- Barriers
- Relationships and support
- Clinician engagement and where to go
- Training and skills
- What can I do today?
- What would you like to be doing?
- Where would you like to be?

Session 2

Results from sticker identification and weighting were analysed the importance of different qualitative and quantitative evidence statements ranked. A key output for resource development was the allocation of evidence statements to the key domains identified in workshop 1. Committing group members to allocate statements to domains indicates how the contents should be distributed through the resource to make it most useful and intuitive for users in clinical practise. See table 2.

Table 2. Mapping evidence statements to proposed resource domains

	Why physical activity? Benefits	*Why physical activity? Mechanisms*	*What to do and where*	*PA History*	*Risk and safety*	*Condition specific messages*
	Total score	Total score	Total score	Total score	Total score	Total score
Theme: Severity of Pain	12	1	0	7	1	3
Theme: Frequency/ Exacerbations of Pain	6	1	1	5	4	3
Theme: Stiffness	10	2	0	0	0	5
Theme: Fatigue	10	2	1	2	2	6
Theme: Quality of Life	15	2	0	1	1	1
Theme: Self Efficacy	6	4	0	2	1	2
Theme: Wellbeing	11	1	0	2	0	2
Theme: Fitness	7	6	0	3	0	2
Theme: Mental Health	9	3	0	2	0	5
Theme: Physical Function	9	1	0	3	0	2
Theme: Absence of Adverse Events	1	0	0	1	17	0
Theme: Work Absence	8	0	0	2	2	2
Improved Pain	13	4	0	0	0	2

Improved Wellbeing	8	5	0	0	1	1
Improved Self Esteem	8	8	1	0	1	0
Improved Fitness	6	6	0	1	0	1
Improved Self Confidence	10	5	1	0	0	1
Improved Self Efficacy	8	9	2	0	0	1
HCP Support	0	2	11	0	2	1
Social Support	0	0	14	4	0	0
Meeting Others	5	3	10	2	0	0
Access to Facilities	0	0	22	2	1	0
Appropriate PA Education	0	2	11	0	4	1
Personalised Programmes	0	1	15	1	1	2
Fun/Enjoyment	10	4	7	2	0	0
Positive Prior Experience	1	3	4	14	2	1
Return to Previous Function	9	2	0	8	0	3
Symptom - Pain	4	0	0	7	6	3
Symptom - Fatigue	3	2	0	4	3	6
Symptom - Stress	4	5	2	4	3	1
Fear of Exacerbating Symptoms	0	0	0	4	15	4
Low Self Efficacy	0	3	2	4	4	0
Inadequate Education About PA	0	0	7	1	12	2
Co-morbidities	1	0	0	4	10	5
Inadequate Resources	1	0	16	1	3	0
Lack of Time	0	0	11	6	5	0

Lack of Previous Experience	1	0	6	9	4	0
Lack of Interest	1	1	0	9	4	0
Belief Pain is Bad and Irreversible	0	0	0	3	10	8
Lack of Support/Personalisation	1	1	9	3	3	0
Cost	1	1	14	1	3	0

Differences between patient and clinician perspectives were also analysed in the sticker feedback session by looking at difference in importance rating between groups. Domains with large differences (defined as a greater than 5-point difference in cumulative clinician vs patient scores) were self-efficacy, inadequate resources, lack of support/personalisation and cost. All these factors were weighted as more important by patients.

Session 3

What specific messages would help you counsel patients on physical activity?

Key messages that were deemed important to include by the group are listed below. They were keen for the resource to explore alternative information delivery strategies such as metaphor and clinical reports. Helping clinicians explain why and how physical activity can improve pain was felt as important and the group agreed that explaining this by cycles of conditioning/deconditioning would be a good way to do this as has been done by the British Lung Foundation to explain the relationship between breathlessness and physical activity in COPD (Spathis *et al.*, 2017).

- Personalisation
    - Find enjoyable and low-cost activities
    - If the first doesn't work, try another
    - What happens to people like me? (+ answers)

- Something is better than nothing
- Start small and build gradually
    - Possibly reflect/suggest percentage increases
- Pain does not have to mean bad
- Improved function and reduced pain and improved pain perception
- PA is a better treatment than any drug/injection
- Being active is medicine
    - Natural healing
    - Stimulate regeneration
- You might feel worse when you start
- Function improves before pain
    - Stronger before better
- Hard work
    - Not a quick fix
- Don't stop because of bad days

Are there any safety considerations we need to include?

Clinicians felt comfortable recommending physical activity as safe for the vast majority of people and felt this should be made clear. However, they felt the wording around this needs to be very clear and qualified with advice on when it is not safe.

- Choose words carefully
    - Clear messaging against words like degeneration, damage, crumbling spine
    - Structural change language
- Symptoms can change even if…
- You won't make your condition worse by being active
- PA is safe

- Very few contra-indications
    - List these on the resource
- Safe compared to other treatments
- The risk from inactivity is greater

Workshop 2 Conclusions

Session one confirmed that the domains identified during workshop 1 were both appropriate and important to be included in the resource. The group went further than workshop 1 in recommending that core components should not be prioritised as they are all equally important in supporting clinical consultations.

The ability to prioritise information according to the individual patient and helping clinicians facilitate patient driven consultations were strong themes throughout the workshop.