

Developing and validating the MSK-HQ Musculoskeletal Health Questionnaire

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“The MSK is rapidly being rolled out as **the MSK PROM** in the UK”

- MSK-HQ published in Sept 2016 – great traction since
- Endorsed by CSP, ARUK, NHS E, and RCGP
- Orthopaedic National PROMs programme
- Rheumatology national register
- Taken up by NHS Scotland as part of a large pilot
- Being used by many private MSK services (BUPA/Nuffield)
- Around 100 NHS Trusts using it Nationally
- 30 license requests for electronic versions

Why was the MSK-HQ developed?

Ambitious vision

- Standardised musculoskeletal PROM throughout NHS
- Used across full range of health professionals
- Holistic view of the impact on a person's health + QOL
- Longitudinal measurement throughout the pathway
- Generic tool across individual MSK condition but using health domains of importance to MSK patients
- Need to balance between condition-specific and generic tools, while retaining sensitivity to change

Development of the MSK-HQ funded

Project began in Oct 1st 2013, finished in April 2016.

Co-production process



Stakeholders:

Patients/users/public
Representatives from National Patient
and Professional Groups,
Physiotherapists, Orthopods, GPs,
Rheumatologists, Pain specialists, MSK
Researchers

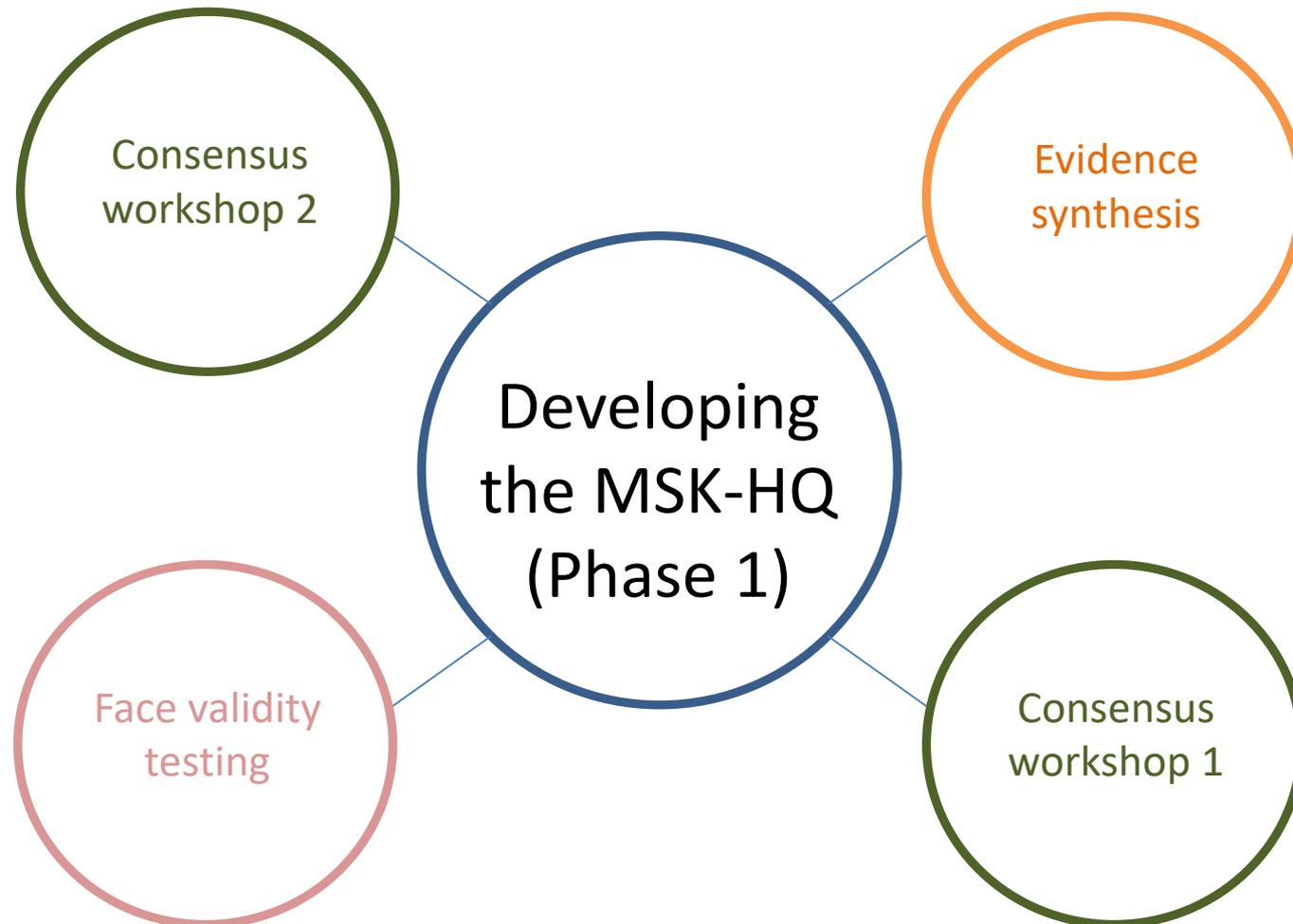
Academic team from Keele & Oxford:

Jonathan Hill, Elaine Hay, Helen Myers,
Jo Protheroe, Adele Higgingbottom,
Steven Blackburn, Kate Dunn, Andrew
Price, Kristina Harris & Ray Fitzpatrick

Specific aims for Phase 1

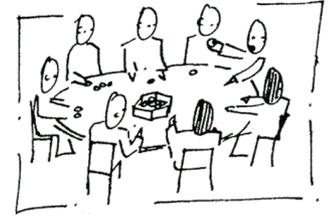
1. To determine key health domains stakeholders agree are treatment targets across the MSK clinical pathway
2. Develop questionnaire items that capture key health domains ready for psychometric testing in Phase 2

Methods Overview



Consensus Workshop 1

Friday 6th December 2013 in Birmingham



Aim What are the key health domains to include in the MSK-HQ?

Stakeholders (n=29)

- Users/patients (n=8)
- Clinicians: GPs, physios, orthopods, rheumatologists, pain specialists (n=7)
- National patient and professional body representatives (n=10)
- MSK researchers (n=4).

Consensus process followed a nominal group technique:

- a presentation of the study aims and findings of the literature review
- ideas generated about potential additional domains with discussion
- a blind vote to reduce the list to those with consensus (>50% support)
- agreement for the tool's maximum item no & response options type
- individual ranking of the domains (via email)

Consensus Workshop 1

Results

Health domains measured by the MSK-HQ

Pain

Mobility

Physical
activity

Sleep

Social
interaction

Work/
Daily routine

Independence

Understanding of
condition & treatment

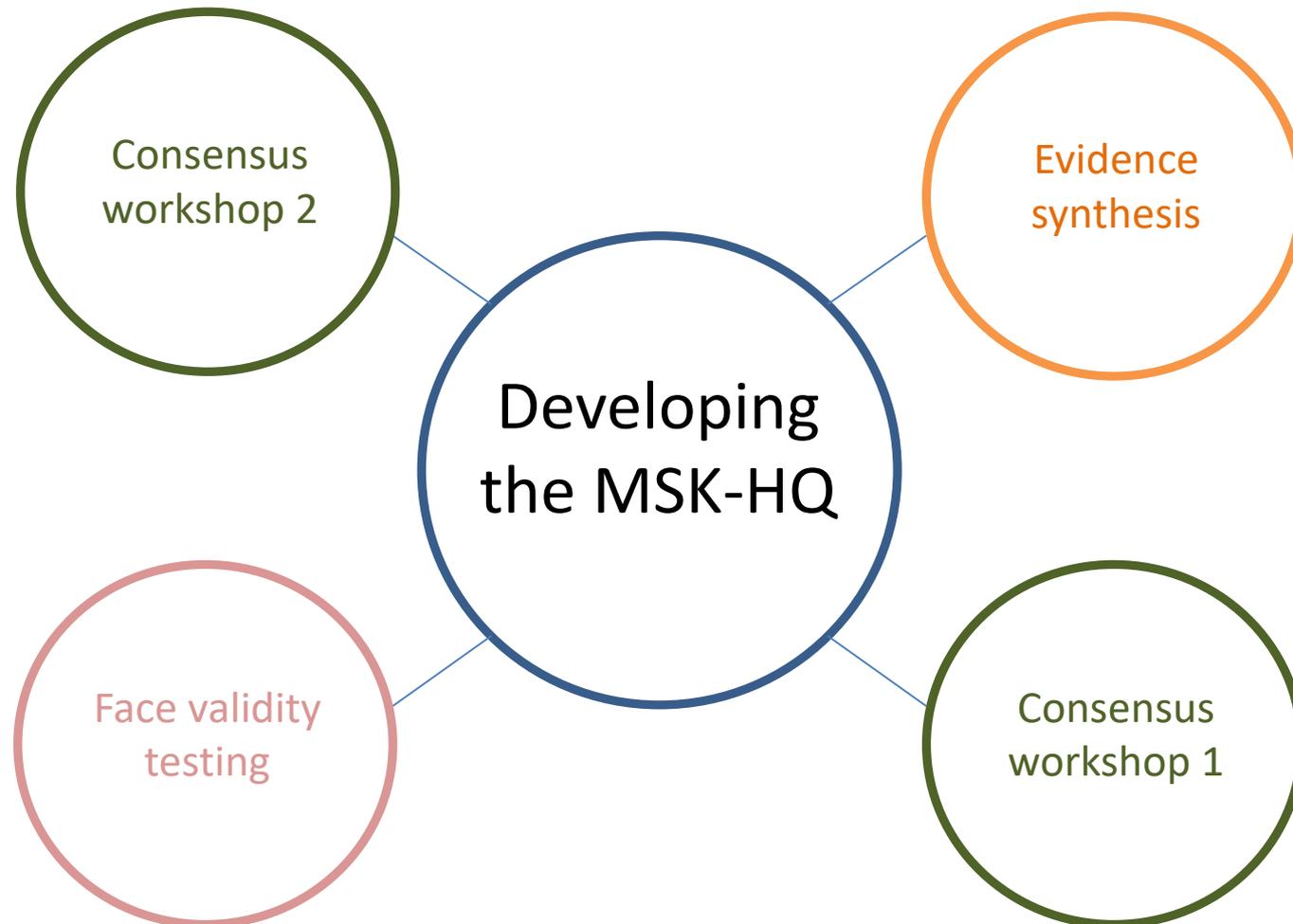
Confidence to
manage symptoms

Washing/
dressing

Fatigue

Overall
impact

Methods Overview



Arthritis Research UK - Musculoskeletal PROM

This questionnaire is about your joint or muscular symptoms such as aches, pain or stiffness. Place a **tick** in **one** box for each question below to indicate which statement best describes you **over the last 2 weeks** (from 'not at all' to 'extreme').

Q1. Pain intensity	Tick v
In the last 2 weeks, how intense was your usual joint or muscular pain or symptoms?	
Not at all	1
Slight	2
Moderate	3
Severe	4
Extreme	5

Q2. Pain when resting	Tick v
In the last 2 weeks, when resting how intense was your joint or muscular pain or symptoms?	
Not at all	1
Slight	2
Moderate	3
Severe	4
Extreme	5

Q3. Walking	Tick v
In the last 2 weeks, how much have your symptoms interfered with your walking?	
Not at all	1
Slightly	2
Moderately	3
Severely	4
Extremely	5

Q4. Dressing	Tick v
In the last 2 weeks, how much have your symptoms interfered with your washing or dressing?	
Not at all	1
Slightly	2
Moderately	3
Severely	4
Extremely	5

Q5. Work/routine	Tick v
In the last 2 weeks, to what extent have your symptoms interfered with your normal work/routine (including activities around the house)?	
Not at all	1
Slightly	2
Moderately	3
Severely	4
Extremely	5

Q6. Emotional well-being	Tick v
In the last 2 weeks, to what extent have you been anxious or low in your mood?	
Not at all	1
Slightly	2
Moderately	3
Severely	4
Extremely	5

Q7. Fatigue or low energy	Tick v
In the last 2 weeks, how much have you been bothered by fatigue or having little energy?	
Not at all	1
Slightly	2
Moderately	3
Severely	4
Extremely	5

Q8. Understanding	Tick v
Thinking about your joint or muscular problem, how well have your healthcare professionals helped you to understand your diagnosis, treatment and medication?	
Not at all	1
Slightly	2
Moderately	3
Substantially	4
Extremely	5

Q9. Sleep	Tick v
In the last 2 weeks, how much have you been bothered by trouble falling or staying asleep?	
Not at all	1
Slightly	2
Moderately	3
Substantially	4
Extremely	5

Q10. Physical activity levels	Tick v
In the last 2 weeks, how well have you managed to achieve the nationally recommended physical activity levels? (this is 90 minutes of vigorous exercise per week)	
Not at all	1
Slightly	2
Moderately	3
Substantially	4
Extremely	5

Q11. Confidence in knowing how to deal with it	Tick v
In the last 2 weeks, how confident have you felt in knowing how to deal with your symptoms?	
Not at all	1
Slightly	2
Moderately	3
Substantially	4
Extremely	5

Q12. Self-worth	Tick v
In the last 2 weeks, how much have you been bothered by feelings of low self-worth?	
Not at all	1
Slightly	2
Moderately	3
Substantially	4
Extremely	5

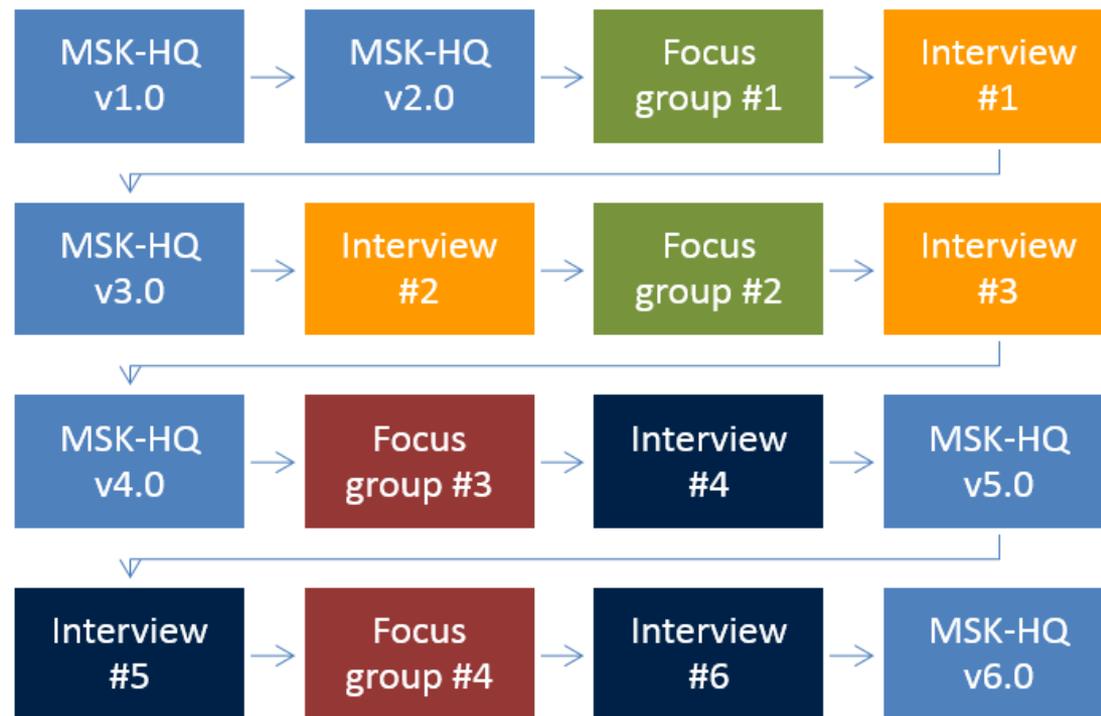
Face validity testing

Overview of the focus groups and interview process

- Revised draft of M-PROM
- Focus group at Keele
- Focus group at Oxford
- Interview with primary care patient
- Interview with secondary care patient

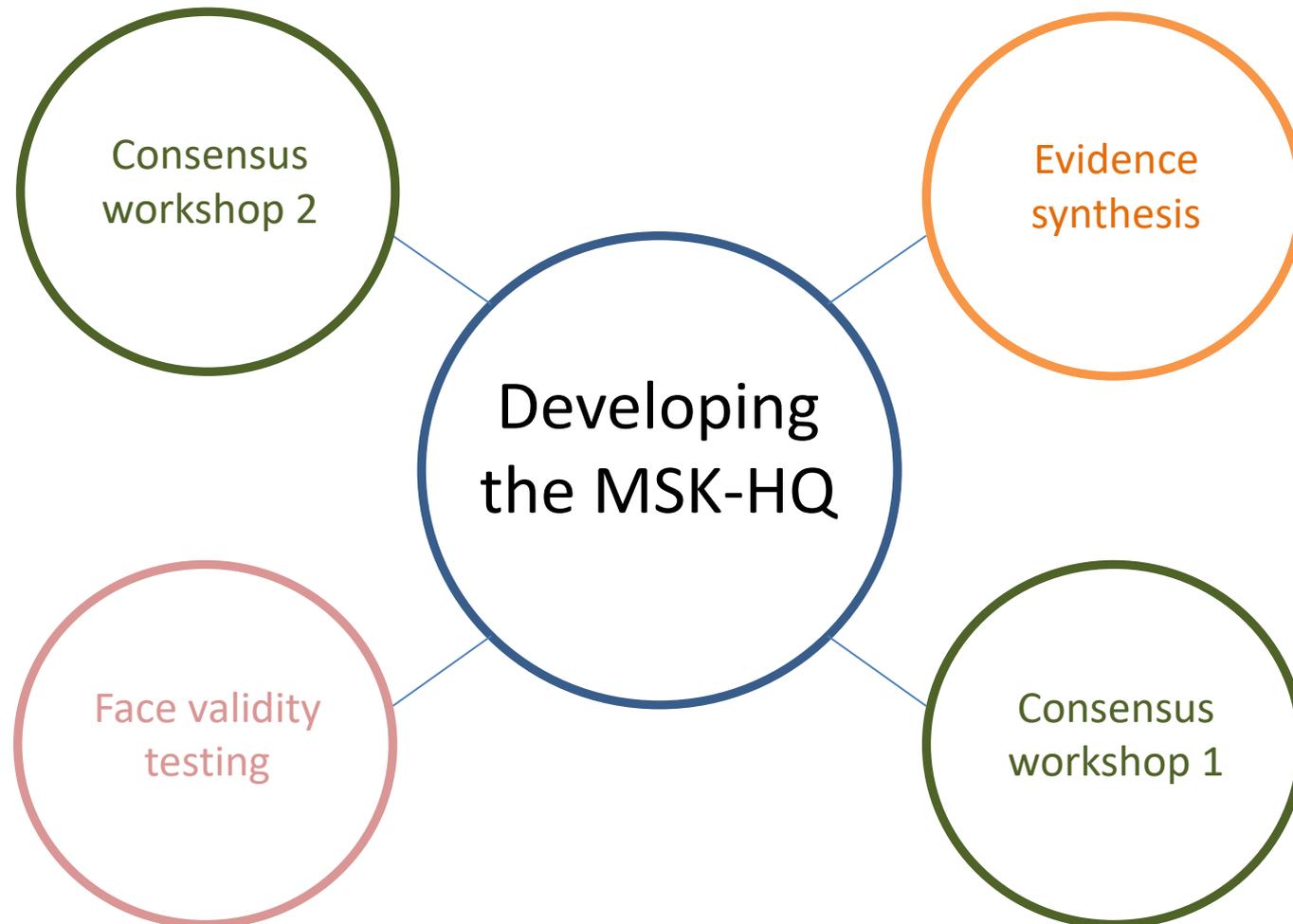
The focus group format:

- a short presentation, outlining aims
- users completed the MSK-HQ individually
- group feedback discussion
- opinions sought about each item
- ideas to improve item relevance & clarity
- consensus discussion about changes
- revisions to the MSK-HQ presented on screen



In-depth cognitive interviews with patients with a range of MSK problems OA (2), RA (1), back pain (1) Knee & hip surgery (1 each).

Methods Overview



MUSCULOSKELETAL HEALTH QUESTIONNAIRE (MSK-HQ)

This questionnaire is about your **joint, back, neck, bone and muscle symptoms** such as aches, pains and/or stiffness.

Please focus on the particular health problem(s) for which you sought treatment from this service.

For each question **tick (✓) one box** to indicate which statement best describes you **over the last 2 weeks**.

1. Pain/stiffness during the day How severe was your usual joint or muscle pain and/or stiffness overall during the day in the last 2 weeks?	Not at all <input type="checkbox"/> 4	Slightly <input type="checkbox"/> 3	Moderately <input type="checkbox"/> 2	Fairly severe <input type="checkbox"/> 1	Very severe <input type="checkbox"/> 0
2. Pain/stiffness during the night How severe was your usual joint or muscle pain and/or stiffness overall during the night in the last 2 weeks?	Not at all <input type="checkbox"/> 4	Slightly <input type="checkbox"/> 3	Moderately <input type="checkbox"/> 2	Fairly severe <input type="checkbox"/> 1	Very severe <input type="checkbox"/> 0
3. Walking How much have your symptoms interfered with your ability to walk in the last 2 weeks?	Not at all <input type="checkbox"/> 4	Slightly <input type="checkbox"/> 3	Moderately <input type="checkbox"/> 2	Severely <input type="checkbox"/> 1	Unable to walk <input type="checkbox"/> 0
4. Washing/Dressing How much have your symptoms interfered with your ability to wash or dress yourself in the last 2 weeks?	Not at all <input type="checkbox"/> 4	Slightly <input type="checkbox"/> 3	Moderately <input type="checkbox"/> 2	Severely <input type="checkbox"/> 1	Unable to wash or dress myself <input type="checkbox"/> 0
5. Physical activity levels How much has it been a problem for you to do physical activities (e.g. going for a walk or jogging) to the level you want because of your joint or muscle symptoms in the last 2 weeks?	Not at all <input type="checkbox"/> 4	Slightly <input type="checkbox"/> 3	Moderately <input type="checkbox"/> 2	Very much <input type="checkbox"/> 1	Unable to do physical activities <input type="checkbox"/> 0
6. Work/daily routine How much have your joint or muscle symptoms interfered with your work or daily routine in the last 2 weeks (including work & jobs around the house)?	Not at all <input type="checkbox"/> 4	Slightly <input type="checkbox"/> 3	Moderately <input type="checkbox"/> 2	Severely <input type="checkbox"/> 1	Extremely <input type="checkbox"/> 0
7. Social activities and hobbies How much have your joint or muscle symptoms interfered with your social activities and hobbies in the last 2 weeks?	Not at all <input type="checkbox"/> 4	Slightly <input type="checkbox"/> 3	Moderately <input type="checkbox"/> 2	Severely <input type="checkbox"/> 1	Extremely <input type="checkbox"/> 0

Please turn the page and continue

8. Needing help How often have you needed help from others (including family, friends or carers) because of your joint or muscle symptoms in the last 2 weeks?	Not at all <input type="checkbox"/> 4	Rarely <input type="checkbox"/> 3	Sometimes <input type="checkbox"/> 2	Frequently <input type="checkbox"/> 1	All the time <input type="checkbox"/> 0
9. Sleep How often have you had trouble with either falling asleep or staying asleep because of your joint or muscle symptoms in the last 2 weeks?	Not at all <input type="checkbox"/> 4	Rarely <input type="checkbox"/> 3	Sometimes <input type="checkbox"/> 2	Frequently <input type="checkbox"/> 1	Every night <input type="checkbox"/> 0
10. Fatigue or low energy How much fatigue or low energy have you felt in the last 2 weeks?	Not at all <input type="checkbox"/> 4	Slight <input type="checkbox"/> 3	Moderate <input type="checkbox"/> 2	Severe <input type="checkbox"/> 1	Extreme <input type="checkbox"/> 0
11. Emotional well-being How much have you felt anxious or low in your mood because of your joint or muscle symptoms in the last 2 weeks?	Not at all <input type="checkbox"/> 4	Slightly <input type="checkbox"/> 3	Moderately <input type="checkbox"/> 2	Severely <input type="checkbox"/> 1	Extremely <input type="checkbox"/> 0
12. Understanding of your condition and any current treatment Thinking about your joint or muscle symptoms, how well do you feel you understand your condition and any current treatment (including your diagnosis and medication)?	Completely <input type="checkbox"/> 4	Very well <input type="checkbox"/> 3	Moderately <input type="checkbox"/> 2	Slightly <input type="checkbox"/> 1	Not at all <input type="checkbox"/> 0
13. Confidence in being able to manage your symptoms How confident have you felt in being able to manage your joint or muscle symptoms by yourself in the last 2 weeks (e.g. medication, changing lifestyle)?	Extremely <input type="checkbox"/> 4	Very <input type="checkbox"/> 3	Moderately <input type="checkbox"/> 2	Slightly <input type="checkbox"/> 1	Not at all <input type="checkbox"/> 0
14. Overall impact How much have your joint or muscle symptoms bothered you overall in the last 2 weeks?	Not at all <input type="checkbox"/> 4	Slightly <input type="checkbox"/> 3	Moderately <input type="checkbox"/> 2	Very much <input type="checkbox"/> 1	Extremely <input type="checkbox"/> 0

Physical activity levels

In the past week, on how many days have you done a total of 30 minutes or more of physical activity, which was enough to raise your heart rate? *This may include sport, exercise and brisk walking or cycling for recreation or to get to and from places, but should not include housework or physical activity that is part of your job.*

None <input type="checkbox"/>	1 day <input type="checkbox"/>	2 days <input type="checkbox"/>	3 days <input type="checkbox"/>	4 days <input type="checkbox"/>	5 days <input type="checkbox"/>	6 days <input type="checkbox"/>	7 days <input type="checkbox"/>
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Thank you for completing this questionnaire.

The MSK-HQ total score is the sum of items 1-14, using the response values provided.

MSK-HQ – Questionnaire for joint, back, neck, bone and muscle symptoms

Any and all copyrights © for the MSK-HQ vests in Oxford University Innovations 2014. The authors acknowledge the kind support of Arthritis Research UK in the development of the MSK-HQ.

Phase 2 – Piloting the MSK-HQ

Aims: to assess the candidate MSK-HQ against a range of criteria:

- 1. Reliability (test retest)**
- 2. Validity (Construct)**
- 3. Responsiveness (sensitivity to change)**
- 4. Acceptability and feasibility (format, scoring, interpretability)**
- 5. Usefulness (in supporting decisions, shared decision-making)**
- 6. Redundancy - reduce number of questions (Rasch Analysis)**

Pilot Cohorts

1. Primary care patients undergoing physiotherapy
2. Secondary care Rheumatology
3. Secondary care Orthopaedics
4. MSK service (qualitative study of influence on commissioners)

Hill et al, BMJ Open 2016.

Results

Pilot involved 720 patients

- 210 attending physiotherapy
- 150 referred for hip surgery
- 150 referred for knee surgery
- 60 referred for shoulder surgery
- 150 attending a rheumatology clinic

Patients felt the MSK-HQ was easy to use and understand

High completion rates (98%). Scores go from 0-56 (higher score = better health).

Reliability of scores at baseline and one week later - ICC was 0.84 ('excellent')

Strong correlation with EQ5D and OHS, OKS, & OSS and the RAID

Responsiveness was as good as site specific measures!

MIC for physiotherapy sample is an MSK-HQ change score of 6 or more

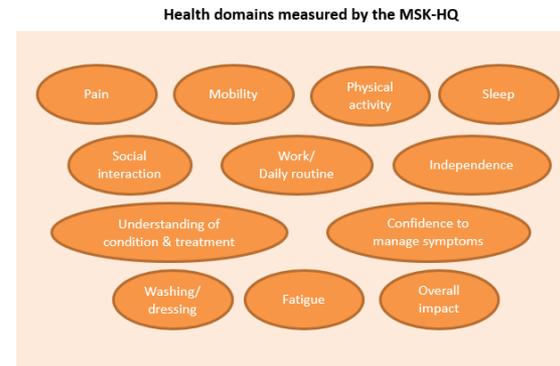
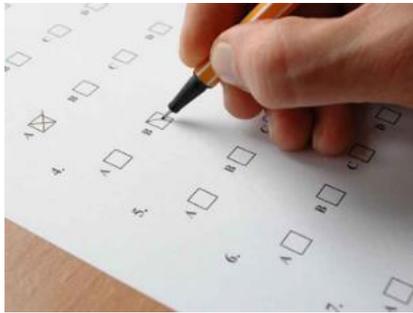
Getting hold of the MSK-HQ

Available online via <http://process.innovation.ox.ac.uk>

Advantages of the MSK-HQ ?

1. Much more sensitive than the EQ-5D
2. Measures the patient's overall MSK health/QOL
3. Measures domains which patients say are important
4. Enables consistent measurement across pathway
5. Individual domains can be tracked to help direct care

Phase 3: Using the MSK HQ at an individual level



- 1. MSK Patients** highlight the **difficulty** they can experience having a **meaningful conversation** during a consultation: **“You never really get a chance to say what you want to say in a consultation.”**
2. Patients underline the need to have a **“start-point for the consultation”** which can provide **“an opportunity to discuss the things that are important to you”**
3. Patients emphasize the **importance** that they should be **central to their care planning process**: **“The patient is the only constant - It’s the patient’s journey through the process and we should be in charge. The MSK HQ could help us focus on what we want and need from our next treatment.”**

Implementing the Musculoskeletal Health Questionnaire (MSK-HQ) Empowering patients in their MSK care

Funded Dec 2017

Jonathan Hill, Steven Blackburn, Jo Protheroe, Martyn Lewis, Alan Rawlings, Andrew Price, Krysia Dziedzic, Gail Sowden, Elizabeth Gibbons, Georgina Craig, Toby Knightley-Day, Kay Stevenson, Ajit Menon, Elaine Hay

Using the MSK-HQ to facilitate individual care planning

1. **Preparation** before the consultation using the MSK-HQ as a consultation prompt:

- Looking at your MSK-HQ responses, which 3 things would you like to focus on improving **today**?
E.g. sleep. *Describe your sleep at present. What would great sleep look like for you? What is working well & helping you sleep already? What is getting in the way of you sleeping well?*
- Is there **anything else you want to discuss** in clinic today e.g. tests, treatments or concerns?
- Speak to record a summary of their current MSK health status

2. **Discussion of the 'preparation' findings using a summary dashboard** to help act as a prompt for the focus of the clinical conversation.

3. **Document** during the consultation: Record the agreed goals, decisions, and personal actions, which the patient subsequently can access at home and share at further MSK consultations.

4. **Review** after the consultation: Use the MSK-HQ to track and monitor progress over time. It can be shared with other clinicians at any point.

Phase 4: Benchmarking MSK Physio

“A key issue for physiotherapists is the lack of evidence regarding variation in clinical outcomes and costs of different models of MSK service delivery. This is becoming increasingly problematic in the challenging UK healthcare economy, and is leading to uncertainty and controversy about how to commission models of best practice.”

1. Roanna Burgess (PhD) started to examine case-mix adjustment to help identify performance outliers
2. She also plans to identify benchmarks for specific conditions such as LBP and OA Knee etc...

Thanks for listening!

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