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What does collaborative healthcare for people with musculoskeletal-related conditions look like? A scoping review

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Abstract

Background Managing musculoskeletal-related conditions usually benefits from involving patients in their care. Collaborative approaches support better health outcomes and enable individuals to take a more active role. However, the musculoskeletal literature remains unclear on how collaboration is reported and measured, as well as the factors that facilitate or inhibit it.

Objectives Summarise the components of the King's Fund shared responsibility for health framework published in the musculoskeletal-related literature, and map the barriers, facilitators, and outcome measures of these components.

Design Scoping review.

Method Five electronic databases were searched. Two independent reviewers screened titles and abstracts followed by full texts to determine eligibility. Data relevant to the objective of the review were extracted independently by the lead author and ranked by frequency count.

Results The search returned 4,101 items, with 140 eligible for inclusion. The most frequently reported components of collaborative healthcare were self-management, education, and shared decision-making. Collaborative approaches including peer support and education, working with communities, designing services in partnership, personal budgets, patient leaders, and involving family/carers were modestly reported. Seventeen barriers and thirty-six facilitators to collaborative healthcare were identified and mapped to patient, clinician, and system-level organisational factors, with seventy-three outcome measures across eight constructs reported.

Conclusions The current musculoskeletal literature sparsely covers the range of collaborative approaches outlined by the King's fund shared responsibility for health framework. More research is required to support the implementation and measurement of collaborative approaches to healthcare when managing musculoskeletal-related conditions.

Clinical trial number Not applicable.

Keywords Scoping review, Self-management support, Shared decision-making, Education, Outcome measures

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Introduction

Musculoskeletal-related conditions are a major health-care challenge for individuals and societies, with 17.1% of adults in England currently living with one [1]. Musculoskeletal-related conditions are the largest contributor to years lived with disability; negatively impacting quality of life and ability to work [2]. Musculoskeletal-related conditions also increase the risk of other long-term conditions [3], including obesity, cardiovascular disease, and depression. As it is predicted the prevalence of musculoskeletal-related conditions will continue to increase [4, 5], optimising approaches to support people experiencing them is urgently required.

One approach detailed in the National Health Service (NHS) long-term plan, published to ensure the sustainability and improvement of healthcare services in England, is to have a stronger focus on collective accountability for enhancing health and care between patients, the public, and the NHS [6]. This cultural shift proposed by The King's Fund, a leading independent health think tank in England, is termed 'shared responsibility for health' [6, 7]. This does not involve delegating work but instead looks to emphasise the collective accountability of individuals and communities alongside formal systems. Recognising that some people may find this more challenging than others, tailored support is necessary to address varying needs. Approaches include promoting self-management, health coaching, information sharing, peer support, designing services in partnership, personal budgets, shared decision-making, greater involvement of families/carers, and working with communities [7]. These strategies require collaboration; promoting partnerships between people and healthcare professionals, empowering patients to actively participate in their care and decision-making. The benefits of supporting greater patient involvement in other long-term health conditions include reduced healthcare consumption, access to a greater variety of services, and improved outcomes, and is highly valued by patients [8–12].

Clinicians working in a musculoskeletal setting report a positive attitude towards working collaboratively with patients [13]. However, they often struggle to fully embrace patients taking greater control over decision-making [14, 15], meaning collaborative approaches are not always adopted [16, 17]. Implementation of collaborative healthcare requires organisational-level involvement to support delivery, monitoring, and evaluation [18]. If performed poorly, collaborative healthcare is associated with higher rates of excessive healthcare consumption and poorer patient-reported health outcomes [19].

For people with musculoskeletal-related conditions, the strategies reported in the literature to enable people to take greater control of their health are unknown [22,

23]. There is also a clear need to understand the barriers and facilitators clinicians face to adopting a collaborative approach to musculoskeletal healthcare. This scoping review aimed to summarise the components of the King's Fund shared responsibility for health framework described and published in the musculoskeletal-related literature, and map the barriers, facilitators, and outcome measures of these components.

Methods

Protocol and registration

Our final protocol was registered prospectively with the Open Science Framework on 17/01/2023 (https://osf.io/872as/?view_only=d5cfd377d8c34b19b4c1d420387f0862) and developed using the preferred reporting items for systematic reviews and meta-analysis protocols extension for scoping reviews reporting guidelines (PRISMA – ScR; [20–22]).

Eligibility criteria

The population, concept, context mnemonic (PCC) was used to guide a clear title and identify the main concepts for this scoping review [22], mapped to the King's Fund shared responsibility for health framework. [7].

Population

Any data source involving or specific to adults (aged ≥ 18) living with a musculoskeletal-related condition was eligible for inclusion.

Concept

Eligible data sources were required to focus on specific dimensions of the King's Fund's shared responsibility for health framework [7]. These methods (shared-decision making, self-management support, health coaching and personalised care planning, information sharing, peer support and education, designing services in partnership, patients as leaders, personal budgets, the role of carers and families and working with communities) have been reported to maximise patient expertise by facilitating more active and collaborative involvement in healthcare decisions.

Context

All public settings of primary, intermediate, secondary, and private healthcare, all healthcare professionals involved in the management of people with musculoskeletal-related conditions, and all geographic locations, were eligible for inclusion.

Types of evidence sources

Heterogenous data sources were eligible to reflect the broad nature of our research question [22]. All peer-reviewed methods were eligible to capture contributions

Table 1 Search terms

	Search terms
S1	Collaborative healthcare OR patient involvement OR self management OR health coaching OR personalised care OR information sharing OR patient education OR peer support OR peer group OR service design OR personal budget OR shared decision making OR community integration OR community medicine OR therapeutic community OR social prescribing
S2	Physiotherap* or physical therap* or rehabilitat*
S3	Musculoskeletal
S4	S1 AND S2 AND S3

from people living with musculoskeletal-related conditions, health care providers, and/or service managers, including qualitative, quantitative, and mixed methods. To capture any emerging evidence that may highlight current or proposed for implementation, non-peer-reviewed methods were also eligible (e.g., conference abstracts). Any sources of evidence that synthesised multiple data sources were excluded (e.g., book chapters, systematic reviews, Delphi studies or narrative syntheses).

Information sources

We performed an initial scoping search in Medline and Web of Science. An analysis of text words within titles and abstracts was used to identify any additional search terms to be included in the final search (see Table 1), with assistance from an academic support librarian [22]. A comprehensive literature search with no date restrictions was subsequently performed in Medline, CINAHL, SPORTDiscus, American Psychiatric Association, and Web of Science on 17/2/2023. For pragmatic reasons, studies published in languages other than English were excluded.

Selection for sources of evidence

One reviewer (JR) exported all identified data sources into Covidence (Melbourne, Victoria, Australia), where duplicates were automatically removed. Two independent reviewers (JR, SD) initially screened 25 items as a pilot testing process and discussed the results to increase consistency. All remaining titles and abstracts, followed by full texts, were subsequently screened by the same two independent reviewers. Disagreements were initially resolved by consensus, and a third reviewer (BN) was available but not required.

Data charting and items

Once all eligible data sources were screened against the eligibility criteria, we extracted key details into a pre-populated data charting table (Microsoft Excel for Windows, Microsoft Corporation, Washington, USA) with

key headings relevant to the objective of the review (title and author, publication year, population, context when able or country of origin, methods, and the concept explored). Identified barriers and facilitators to collaborative healthcare and any outcome measures used were also extracted. Data charting was conducted by a single reviewer (JR) and second checked for accuracy by a second reviewer (SD).

Analysis of evidence and presentation of results

Frequency counts of the reviewed concepts were depicted in tabular form to summarise the components of the King's Fund shared responsibility for health framework reported in the musculoskeletal literature. Data are presented in tables and ranked by frequency count. An inductive process by a single author (JR) was used to identify and map strategies reported as either barriers or facilitators, with a new heading created and a frequency recorded for each novel characteristic. Barriers and facilitators were then mapped inductively relative to service, clinician, or patient when reported, with the five most frequent barriers of each component reported (when available or when frequencies equal to the top five ranked). Visualisations were produced using Wordcloud2 R (version 4.2.1, R Foundation for Statistical Computing, Vienna, Austria) to present results. An identical iterative process was followed to map all outcome measures reported for collaborative approaches, categorised by measured construct with total frequency count and reported by how they were deployed (e.g., patient- or observer-reported).

Results

Systematic search

Our systematic search returned 4,101 items; 3,353 after removing duplicates. 140 items were eligible for inclusion after screening titles and abstracts followed by full texts against our eligibility criteria (see Fig. 1). These 140 eligible items are included in the data charting table (supplementary file 1).

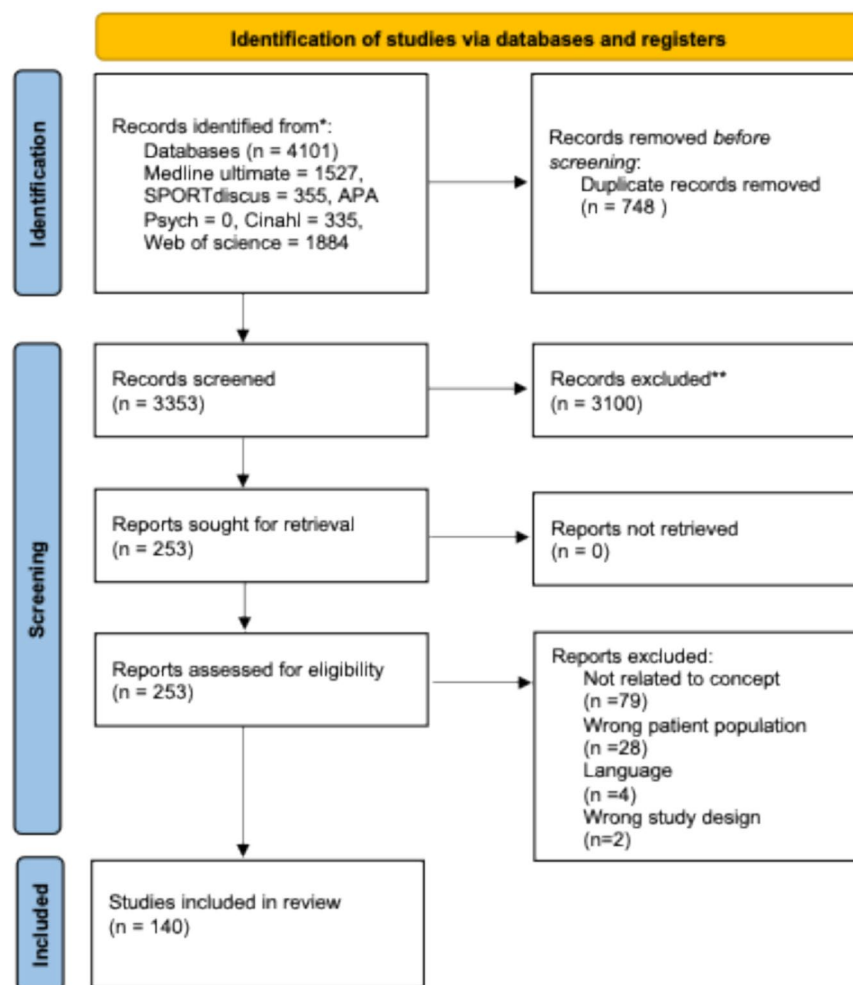


Fig. 1 PRISMA flow diagram

Eligible items

Of the 140 eligible items, 44 were qualitative studies [12, 13, 23–64], 30 were randomised controlled trials (2 follow-ups and 2 secondary analyses) [65–94], 16 were observational studies (cohort/cross-sectional) [95–110], 12 were oral presentation abstracts [111–122], 10 were feasibility studies [123–132], 9 were mixed-methods [133–141], 8 were pilot studies [142–149], 5 were case series or reports [150–154], 2 were content analyses [155, 156], 2 were quasi-experimental studies [157, 158], and 2 were intervention development study [159, 160].

Components of the shared responsibility for health framework reported in the musculoskeletal literature

Within the shared responsibility for health framework, a breakdown of how the concepts reviewed were reported are detailed in Table 2.

Barriers to collaborative healthcare in musculoskeletal settings

The most frequent system-level barriers included limited time ($n = 14$; [26–39]), being unable to access services (transport, technology, internet; $n = 14$; [26, 29, 32, 34, 36, 38–46]), inadequate training and supervision from employers ($n = 6$; [29, 32, 41–43, 47]), working within a healthcare system that does not allow a biopsychosocial approach to healthcare ($n = 4$; [34, 39, 41, 47]), and inadequate training as part of undergraduate physiotherapy education ($n = 2$; [47, 48]). The most frequent individual clinician barriers included poor capability ($n = 4$; [34, 41, 42, 48]), and therapist-centred decision making ($n = 1$; [49]). The most frequent individual patient barriers included unique patient values (assuming a passive role, beliefs, expectations, uncertainty, religion; $n = 16$;

Table 2 A frequency count for concepts reported

Concept	Frequency count
Self-management support	83 (59%)
Education	28 (20%)
Shared decision-making	12 (9%)
Peer support and education	6 (4%)
Health coaching and personalised care planning	4 (3%)
Working with communities	3 (2%)
Designing services in partnership	3 (2%)
The role of carers and families	1 (1%)
Patients as leaders	0 (0%)
Personal budgets	0 (0%)
Information sharing	0 (0%)

[26, 32, 36, 38, 41, 42, 47, 48, 50–57]), low health literacy ($n = 15$; [28, 29, 37, 39, 40, 46, 48, 58–65]), negative psychological state (fear avoidance, self-efficacy, anxiety and depression, motivation, beliefs and expectations, coping and acceptance; $n = 10$; [26, 29, 34, 38, 48–50, 66–68]), high levels of pain and disability ($n = 8$; [26, 34, 38, 46, 50, 57, 69, 70]), and low social support ($n = 5$; [26, 32, 46, 50, 68]). These combined barriers are mapped visually in Fig. 2, where, the font size within the word cloud corresponds to the frequency of each barrier, with larger fonts indicating a higher frequency of occurrence and the full range of barriers identified are reported in supplementary file 2.

Facilitators of collaborative healthcare in musculoskeletal settings

No system-level facilitators were reported. The most frequent clinician facilitator was the role and use of goal setting ($n = 37$; [30, 35, 40, 42–44, 51, 60, 64, 66, 70–96]), personalising care ($n = 33$; [26, 35, 36, 39–41, 43, 50, 63, 64, 76, 77, 81, 86, 86–90, 92, 95, 97–109]), developing working alliance, ($n = 24$; [27, 35, 39, 40, 42, 43, 45, 47, 48, 51, 54, 56, 63, 70, 73, 75, 77, 83, 91, 92, 109–112]) supporting dialogue, ($n = 22$; [56, 57, 59, 61, 63, 71, 76, 77, 80, 83, 84, 86, 92, 101, 109, 112–118]) and problem solving ($n = 20$; [41, 44, 48, 51, 54, 75–77, 81–84, 88, 91, 96, 112, 119–122]). The patient's role as a facilitator was highlighted through peer support ($n = 39$; [28, 31, 70, 77–79, 83, 86, 91–93, 95, 38, 97, 102, 107, 108, 111, 114, 117, 120, 121, 123, 40, 124–131, 44, 52, 53, 59, 66, 68]), unique patient values (beliefs, treatment options, preferences and illness perceptions, priorities, concerns supported; $n = 29$; [31, 35, 73, 74, 78, 86, 92, 95, 96, 100, 104, 107, 41, 111–113, 116, 125, 130, 132–134, 43, 44, 46, 51, 54, 57, 63]), self-reflection ($n = 18$; [43, 45, 106, 116, 122, 123, 125, 127, 135, 136, 53, 56, 67, 84, 85, 91, 92, 96]) and peer learning (sharing experiences and strategies; $n = 12$; [28, 54, 123, 132, 70, 82, 86, 93, 107, 111, 117, 121]). The combined facilitators are mapped visually in Fig. 3, ranked by frequency, with the full range of identified facilitators are reported in supplementary file 3.

Measures reported in musculoskeletal settings

Seventy-three outcome measures were identified in the included data sources, and iteratively grouped into eight categories: pain; function and disability; psychological factors; work and social factors, evaluation of concept;

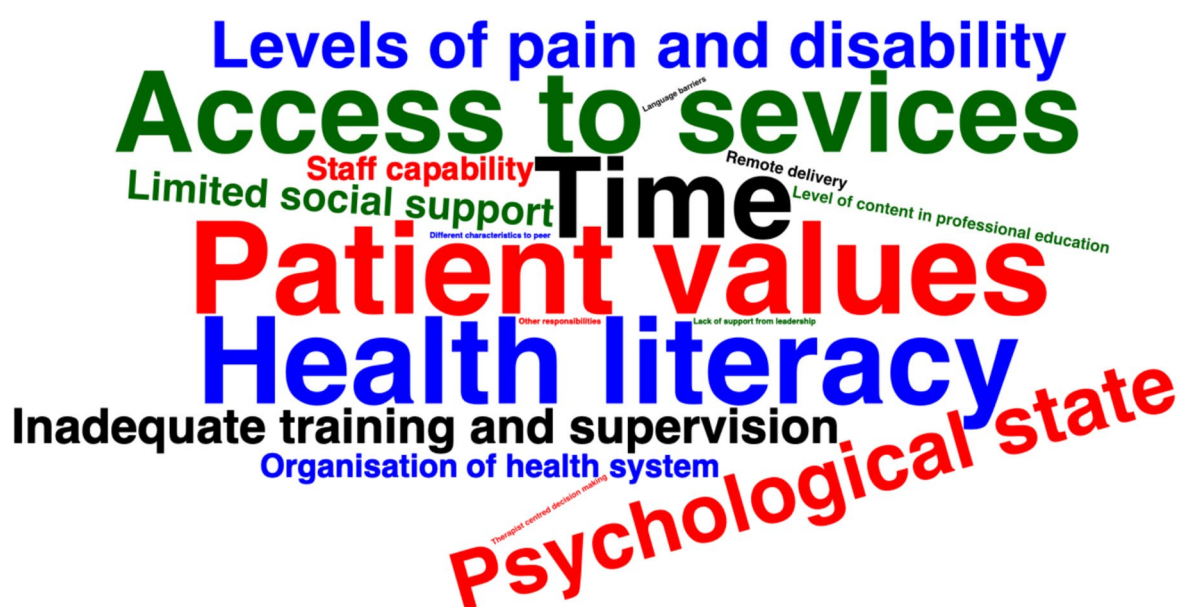
**Fig. 2** A word cloud representing the barriers to collaborative healthcare in musculoskeletal settings



Fig. 3 A word cloud representing the facilitators to collaboration within a musculoskeletal setting

patient knowledge and decision making; performance; and risk stratification. The combined outcome measures, categorised by measured construct with total frequency count and method of deployment, are presented visually in Fig. 4. A further breakdown of the specific measures are reported in the tables presented in supplementary file 4.

Discussion

The collaborative healthcare strategy most frequently reported in the musculoskeletal literature was supported self-management. This is recommended for the management of musculoskeletal-related conditions [162] and can aid people in developing the knowledge, skills, and confidence to actively manage their condition [163]. Delivery approaches to achieve supported self-management include group interventions facilitated by healthcare professionals, one-to-one sessions, and technological interventions (e.g., online self-help support). Group interventions led by healthcare professionals have demonstrated successful fostering of supported self-management in the short-, medium-, and long-term [164]. However, further understanding of effectiveness is needed to ensure that this approach supports the diverse needs of patients with musculoskeletal-related

conditions, as it may increase demands on some individuals and result in poorer outcomes [165]. Other frequently reported components included education and shared decision-making, which are supported by NHS England to personalise care [166–168]. Whilst education is a common component of supported self-management programmes [169], it was described as a discrete component in the reviewed literature, with education aiming to increase understanding and empower people in managing their condition [170]. Recommendations for the delivery of these approaches have been outlined to support best practice [13, 169–173], but evidence of the effectiveness on long-term outcomes in the musculoskeletal literature is currently limited [174–176]. Despite the high frequency of these approaches reported in this review, healthcare professionals experience challenges when implementing them [14, 15, 177–181], highlighting that further support is required to make them a part of routine care.

Reported patient-related barriers to collaborative healthcare included unique values, low health literacy, negative psychological factors, and high levels of pain and disability, which aligns with previous studies [182–186]. As well as inhibiting collaboration, these identified



Fig. 4 Spider diagram mapping outcome measures reported within included studies

barriers led to challenges in navigating healthcare systems and poorer musculoskeletal-related health outcomes [161, 182–185, 187–189]. Healthcare professionals have previously been identified as a barrier to collaboration and similar findings were identified in this review; with reduced capability, knowledge, and negative attitudes to support greater patient involvement highlighted [178, 190–192]. To make a reality of the cultural change proposed by the King's Fund shared responsibility for health framework, current and future healthcare professionals need to be able to identify and support patient's

capabilities and motivation to be involved in decisions and develop approaches to equip people to take greater responsibility. A further barrier to collaboration identified both in this review and the previous literature was access to services and limited consultation time [54], however innovative community-based projects to transform the delivery of care and subsequent barriers are reported in other health conditions, suggesting new ways of working [193]. To achieve the maximum benefits healthcare workers require system-level support to design and deliver services to support structural, cultural,

and attitudinal changes or risk falling short of reaching the ambition set out by the King's fund and the NHS long-term plan [6, 7, 168].

A previous review identified physiotherapists as working collaboratively by involving patients in decision-making, promoting dialogue, and being responsive to individual needs [194], which aligns with key facilitators found in this review. Approaches reported frequently to facilitate patient involvement included goal setting, problem-solving, action planning, and coping planning, and have been encouraged in practice to support interpersonal collaboration and the development of the knowledge, skills, and confidence to self-manage [163, 166, 167, 195, 196]. Personalised approaches were highlighted in this review to facilitate collaboration; providing opportunities to understand “what matters to you”, rather than “what is the matter with you” [197], reflecting the focus on personalisation in the NHS long-term plan. Peer support was reported as a frequent facilitator and strategies to encourage greater dialogue with peers can support social connection, feelings of isolation, coping skills, and attitudinal change in people with musculoskeletal-related conditions [190, 198]. Despite a wide range of facilitators of collaboration reported frequently in this review their implementation in practice remains unclear. Evidence of effectiveness is required to ensure these facilitators of greater involvement in people with musculoskeletal pain are beneficial. Within the shared responsibility for health framework

The constructs most frequently measured related to function and disability, psychological factors and pain; with patient-reported outcome measures most frequently deployed. Measures of collaborative approaches to support self-management and identify patient involvement have been developed and encouraged [199, 200], but this review identified a low-frequency count for any measure to identify patients' knowledge and decision-making and subsequent capabilities or motivation to be involved, alongside low reporting of measures to observe the collaborative approach. Similar findings of uncertainty relevant to measurement to support implementation have been reported in attempts to capture personalised care [201], highlighting the gap in the promotion of these approaches to what people may experience [202]. If the management of musculoskeletal-related conditions benefits from involving patients in their care greater certainty is required on how to measure its implementation and effectiveness to ensure the sustainability of greater patient involvement.

Limitations

The breadth of our question may have hindered our ability to map the whole body of evidence. To identify a

wider range of approaches; evidence from the grey literature, professional bodies, or websites may have identified innovative data relevant to our objectives. We decided not search for these resources due to the anticipated large volume of data extraction identified following the initial scoping search, the broad nature of the question, and multiple objectives [203]. We instead conducted a comprehensive literature search across multiple databases to capture contributions from a wide range of peer-reviewed methods.

Another limitation was the potential bias toward studies involving the physiotherapy profession. Although no studies were excluded based on profession, the search was developed to reflect the increasing role that physiotherapists are having across the triage and management pathways of musculoskeletal-related conditions [204, 205]. We acknowledge that this may have limited the inclusion of literature involving other healthcare professionals and subsequent generalisability across all musculoskeletal-related care pathways. As only 95 of the 140 (68%) included studies involved physiotherapy in the population or concept, we are confident that other professions have been captured within our chosen search.

Implications for future work

Future studies in people with musculoskeletal-related conditions should look to capture components of the King's Fund shared responsibility for health framework less frequently researched [206]. This should include peer support and education, health coaching and personalised care planning, and working with communities. These components have been developed across other long-term conditions, comparing favourably to medical settings in psychological and physical constructs [193, 207–216], but robust evidence of implementation and outcomes is limited in musculoskeletal healthcare. Key barriers and facilitators to greater collaboration between the healthcare system and people with musculoskeletal pain were identified and largely aligned with previous literature. It is unknown how well these barriers are considered or how well facilitators are delivered and if they can overcome the barriers to collaboration. To understand how well these approaches are delivered, an ability to measure the concept is required, and this review highlighted that the evaluation of collaborative approaches is under-reported, and measures to appraise the capabilities and confidence of people with musculoskeletal-reported conditions are limited. Future research should look to understand the effectiveness and implementation of collaborative approaches to make a reality of the cultural shift proposed by the King's Fund [7].

Conclusion

Components of the King's Fund shared responsibility for health framework frequently reported in the published musculoskeletal-related literature include self-management support, education, and shared decision-making, but many are reported infrequently. To facilitate collaborative healthcare, barriers including access to services, time constraints, low health literacy, high pain and disability, psychological factors, individual values, staff capability, and therapist-led decision-making should be addressed. Goal setting, personalising care, developing working alliances, promoting dialogue, and problem-solving are reported frequently and should facilitate the implementation of collaborative healthcare. This review outlines opportunities for strategies to move away from the paternalistic medical model of 'clinician knows best' and ensure that the visions of the NHS long-term plan can become 'business as usual'.

Abbreviations

NHS	National Health Service
PRISMA – ScR	Preferred reporting items for systematic reviews and meta-analysis protocols extension for scoping reviews
PCC	Population, concept, context mnemonic

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12891-025-08814-6>.

Supplementary Material 1
Supplementary Material 2
Supplementary Material 3
Supplementary Material 4

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Authors' contributions

JR contributed to conception, design, analysis, interpretation of data, and writing. SD contributed to analysis and interpretation of data. AM contributed to writing (review and editing). BN contributed to writing (review and editing). All authors read and approved the final manuscript as well as agreeing to their own contributions.

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Data availability

All available data is included in the published manuscript or related supplementary files.

Ethics approval and consent to participate

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Consent for publication

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Competing interests

The authors declare no competing interests.

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