What does high value care for musculoskeletal conditions mean and how do you apply it in practice? A consensus statement from a research network of physiotherapists in New South Wales, Australia

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ABSTRACT

Objectives To develop a physiotherapist-led consensus statement on the definition and provision of high-value care for people with musculoskeletal conditions.

Design We performed a three-stage study using Research And Development/University of California Los Angeles Appropriateness Method methodology. We reviewed evidence about current definitions through a rapid literature review and then performed a survey and interviews with network members to gather consensus. Consensus was finalised in a face-to-face meeting.

Setting Australian primary care.

Participants Registered physiotherapists who are members of a practice-based research network (n=31).

Results The rapid review revealed two definitions, four domains of high value care and seven themes of high-quality care. Online survey responses (n=26) and interviews (n=9) generated two additional high-quality care themes, a definition of low-value care, and 21 statements on the application of high value care. Consensus was reached for three working definitions (high value, high-quality care, patient values, cost-effectiveness, reducing waste), a final model of four high value care domains (high-quality care, patient values, cost-effectiveness, reducing waste), nine high-quality care themes and 15 statements on application.

Conclusion High value care for musculoskeletal conditions delivers most value for the patient, and the clinical benefits outweigh the costs to the individual or system providing the care. High-quality care is evidence based, effective and safe care that is patient-centred, consistent, accountable, timely, equitable and allows easy interaction with healthcare providers and healthcare systems.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ This study used Research And Development/University of California Los Angeles Appropriateness Method methodology to reach consensus and established protocols a priori.
⇒ All stages of the study (from conception to manuscript writing) were coproduced with a research network of physiotherapists, who predominantly work in private practice.
⇒ The perspectives included in this study may not be representative of all physiotherapists; a minority of participants were female and members of a research network likely share similar views about care value.
⇒ Voting was not anonymous; participant’s votes may have been influenced by other members.
⇒ Four participants left the meeting before finalising all statements, because they had other commitments to attend, however, they were asked to provide feedback following the workshop.

INTRODUCTION

Musculoskeletal conditions are prevalent and are the leading cause of years lost to disability worldwide. Due to population growth and ageing, the global musculoskeletal burden...
is predicted to increase.\textsuperscript{1–5} Healthcare spending associated with musculoskeletal care typically outstrips spending on other health conditions.\textsuperscript{6–10} To address the growing musculoskeletal burden, there are increasing calls to provide high value care.\textsuperscript{11–15} High value care aims to provide cost-effective care that optimises patient outcomes.\textsuperscript{16} All healthcare professionals, including physiotherapists, should aim to deliver high value care.\textsuperscript{17–19}

Definitions of high value care have lacked input from a number of perspectives, including the people who are tasked with delivering it. There is a great deal of literature that attempts to define care that is value based.\textsuperscript{11 14–16 20–24} Most definitions of high value care are not specific to musculoskeletal conditions or physiotherapy care.\textsuperscript{20–22 25 26} There is no consensus on the definition of high value musculoskeletal care for physiotherapists. Where literature is specific to physiotherapy, terms like high-quality care or evidence-based care are often conflated or used synonymously with high value care.\textsuperscript{15 17 18 27–29} Without input from clinicians about high value care and how it applies to practice, definitions may lack clinically applicable information and any intended impact on care delivery is unlikely to be realised.

Objectives

We aimed to develop a physiotherapist-led consensus definition for, and statements about the provision of, high value care for musculoskeletal conditions. This study comprised three stages.

For stage one, we aimed to:
1. Synthesise the definitions currently used for (A) high value care and (B) high-quality care in physiotherapy for musculoskeletal conditions.
2. Identify themes that are common across the definitions.
3. Develop draft definitions of high value care and high-quality care for musculoskeletal conditions.

For stage two, we aimed to:
1. Gather feedback from physiotherapists in practice about our results from stage 1.
2. Generate draft statements about how physiotherapists provide high value care in practice.

For stage three, we aimed to:
1. Agree on final definitions and application statements among the participating physiotherapists via a consensus process.

METHODS

We performed a three-stage study, which used adapted methods of the Research And Development/University of California Los Angeles Appropriateness Method (RAND/UCLA).\textsuperscript{30} The RAND method was most appropriate for this study because it allows an expert panel to discuss the results of each round through survey and a face-to-face meeting.\textsuperscript{30,31} Our full study protocol is available on Open Science Framework at https://osf.io/hdufv/.\textsuperscript{32}

Participant characteristics

We recruited participants from a practice-based research network of physiotherapists in the Hunter Region of New South Wales, Australia (table 1). We included participants if they were:
1. A network member.
2. A registered physiotherapist.
3. Providing care for people with musculoskeletal conditions.

We excluded network members who were not registered physiotherapists. Some study participants were also involved as working group members who assisted in data interpretation and contextualisation.

Stage one: evidence review

We undertook a rapid review of the literature to assess existing definitions of high value and high-quality care.

We searched three databases (Medline, Embase and Cinahl) using terms for value, quality and other synonyms, along with musculoskeletal and physiotherapy.\textsuperscript{33 34} We used article reference lists, and internet search engines to pursue other sources and grey literature.\textsuperscript{34} Authors (CG, BD and CMW) independently screened articles in duplicate. We thematically analysed data to establish common themes and develop draft definitions.\textsuperscript{35} We refined definitions, themes and developed a conceptual model by discussing the relationship between themes.

Use of results

We provided an interim report of our review results to all participants (found at https://osf.io/hdufv/) who provided their feedback in stage two.
Stage two: network feedback

Participants provided their feedback on the definitions, themes and conceptual model from stage one through online surveys and individual semistructured interviews.

Recruitment and data collection

We emailed all eligible participants (n=31, table 1) the interim report, which included an invitation to complete a survey and volunteer for an interview. In the survey, participants provided data through Google Forms (Google, Alphabet). Survey questions included: whether participants thought any changes needed to be made; participants’ general perspectives on high value care; and what themes they would prioritise in clinical practice (online supplemental appendix 1).

We held and recorded online interviews through Zoom. In the interviews, we asked participants about the application of high value care from their clinical experience using the domains and themes from stage one as a discussion guide (online supplemental appendix 1).

Data analysis

We cleaned and transcribed interviews onto Google documents (Google, Alphabet). Two authors coded survey data (CG and RG), and CG coded all interview transcripts. Where participants answered the survey and took part in an interview, these data were coded as one case.

We brought similar codes together to form categories and themes, using the original high value care model as a conceptual framework for theme development. We aimed to generate themes in the form of (A) additions and the research team’s perspective cannot be made. We considered data saturation by assessing whether sequential interviews led to new themes; once no new themes were identified, we determined that the data were sufficiently saturated.

All authors involved in developing themes are physiotherapists with lived experience of providing care to people with musculoskeletal conditions and members of the same research network. Therefore, theme development is likely a shared endeavour where authors who analysed data shaped theme development through their own experience, and a clear delineation between participant data and the research team’s perspective cannot be made.

Use of results

Themes were summarised and incorporated into a new report and provided to all participants prior to the consensus meeting (found here: https://osf.io/hdufv/).

Stage three: consensus meeting

We invited all eligible participants (n=31, table 1) to the face-to-face consensus meeting through email. In reminder emails, we highlighted items that had been added during stage two and asked participants to prepare their thoughts for these items in advance.

Criteria for consensus

Our procedure for gaining consensus during stage three was prespecified as:

- All participants present voted on whether they agreed or disagreed to include changes and additions from step 2 in the final definitions and themes.
- Consensus was reached if 80% or more participants agreed.
- If no consensus was reached initially, we facilitated a discussion about the concept. We first heard from participants who did not agree to inclusion, then from participants who agreed to include the item.
- If there was agreement on the general concept, we proposed items again with different wording and voted again.
- If still no consensus reached, items were not included (we did not force consensus).

To set the level of agreement necessary for consensus, senior investigators first considered the normal limits of other consensus studies. Senior investigators also considered that participant’s similar professional backgrounds may have taken more than the available time to reach 100% agreement on all items. So, for pragmatic reasons, 100% agreement was not sought.

Patients and public involvement

We did not aim to involve patients and the public in this study, because we want to involve them in the next parts of our larger study which seeks to develop a more comprehensive model for high value care from the patient’s lens.

RESULTS

Stage one: evidence review

Thirty-nine sources were included in data extraction and synthesis (for full results, including Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) flow diagram, see https://osf.io/hdufv/). Twenty-five sources were academic journal articles (64%) and 14 (36%) were grey literature (government, international health body or professional organisation reports). Most (62%) sources provided high level conceptual guidance on high value care for health systems. Only seven sources (18%) provided recommendations for individual clinicians to assist in high value care application. Only one source (3%) involved care...
**Table 2** Explanation of the domains of high value care

<table>
<thead>
<tr>
<th>Domain</th>
<th>Explanation from physiotherapists' perspectives*</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-quality care</td>
<td>High-quality care consists of nine themes (safe, connected, consistent, patient-centred, evidence based, equitable, timely, effective and accountable). High-quality care ensures care has potential for maximum clinical benefit and involves the consideration of all nine themes (safe, connected, consistent, patient-centred, evidence based, equitable, timely, accountable and effective).</td>
</tr>
<tr>
<td>Patient values</td>
<td>Providing high value care involves appreciating the patient’s values. Values are deep-seeded motivations that can drive behaviour. Patient expectations can reflect patient values, but often values are harder to discern without skilled communication. Applying high value care involves more than simply asking what the patient’s expectations are and matching care to these expectations.</td>
</tr>
<tr>
<td>Cost-effectiveness</td>
<td>The general concept of cost-effectiveness in healthcare is the ratio of estimates for costs of treatment and its effectiveness from a specific perspective; patient, clinician, healthcare system. From a clinician’s perspective, a cost-effective service must take into account the revenue they gain from their service minus the associated costs the clinician incurs to provide it. Clinicians must also consider what patients may be willing to pay for service provision.</td>
</tr>
<tr>
<td>Reducing waste</td>
<td>On an individual clinician level, reducing waste means decreasing the use of low value care options. Clinicians should remove unnecessary activities in the cycle of care, such as unnecessary tests, treatments, procedures and referrals.</td>
</tr>
</tbody>
</table>

*Our study sample predominantly consists of Australian physiotherapists working in a private practice.

providers in developing clinical recommendations for osteoarthritis consultations.60

We found that high value care typically consists of four domains (patient values, cost-effectiveness, reducing waste and high-quality care) (table 2), in which high-quality care consists of seven themes (safe, connected, consistent, patient-centred, evidence based, equitable) (table 3). We summarised the contributory domains and themes to provide definitions for high value and high-quality care. We produced a conceptual model to illustrate the relationship between domains and themes, alongside the key stakeholders in care provision found in the literature (figure 1).

**Stage two: network feedback**

We received 26/31 (84%) survey responses and conducted nine interviews. We determined that data was sufficiently saturated after the ninth interview. We received eight responses that suggested changes to the model.

Quotes from interviews and surveys can be found in online supplemental appendix 2. Participants’ feedback led to two additional high-quality care themes (effective and accountable). The top three themes were noted by participants when asked what domains or themes were most important in clinical practice: patient-centred (23/26 (88%)), evidence based (15/26 (57%)), reducing waste (12/26 (46%)). We generated an additional definition for low value care, and 21 statements on application (online supplemental appendix 2).32

**Stage three: consensus meeting**

Overall, 16/31 (52%) of participants attended the consensus meeting. Online supplemental appendix 3 lists full results of the consensus meeting. Two additional themes for high-quality care reached consensus (effective and accountable care, table 3), which were incorporated into our definitions and conceptual model. Consensus was reached on the additional definition of low value care. Fifteen application statements reached consensus. No disagreements were raised when we provided meeting participants with an opportunity to provide written feedback on the summary report.

**Final output**

The process resulted in the following definitions from physiotherapists’ perspectives.

**High value care**

Care that delivers most value for the patient, and the clinical benefits outweigh the costs to the individual or system providing the care. Within high value care there are four contributing domains: high-quality care; patient values; cost-effectiveness; reducing waste (see table 2 for further explanation of domains).

**High-quality care**

Evidence based, effective and safe care that is patient-centred, consistent, accountable, timely, equitable and allows easy interaction with healthcare providers and healthcare systems (connected) (see table 3 for details).

**Low value care**

Care that is not patient-centred, or aligned with the patient’s goals, and is ineffective and/or unnecessary. The process also produced a conceptual model in figure 1 that links the definitions with the context of care and 15 statements related to application of the domains and themes in practice (figure 2).

**Areas of disagreement**

Online supplemental appendix 3 lists areas of disagreement. Six statements did not reach consensus. Of these, three statements were included as accompanying explanatory text to domains and themes. The other three were
Table 3  
Explanation of themes of high-quality care

<table>
<thead>
<tr>
<th>Themes found in literature</th>
<th>Definition from physiotherapists’ perspectives</th>
</tr>
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<tbody>
<tr>
<td>Safe</td>
<td>Care that does not harm the patient. The clinician should aim to minimise harms and adverse events in care. Safe care should be well supported by policies and procedures and a clear reporting procedure.</td>
</tr>
<tr>
<td>Connected</td>
<td>Care that allows patients to move easily between and across sectors of healthcare (eg, between primary and tertiary care). Clinicians should prioritise efficient interprofessional communication and empower patients to maintain continuity over their own care.</td>
</tr>
<tr>
<td>Consistent</td>
<td>All care should be individualised in partnership with patients; however, clinicians should strive to reduce inappropriate variability in care. Reducing unwanted variability in care is important across episodes of care, but also across sectors and other practitioners. Clinicians can use guidelines to reduce care variability.</td>
</tr>
<tr>
<td>Patient-centred</td>
<td>Care that is respectful of and respective to individual patient preference, needs and values. This theme is similar to patient values, however, patient values refer to understanding and operationalising what is valuable to the patient. Patient-centredness ensures the patient is empowered to take an active role in their care. Specific clinical skills to enhance patient-centredness can include, but are not limited to, adapting communication and assessments according to patient’s needs, and partnering with patients to develop management plans.</td>
</tr>
<tr>
<td>Evidence based</td>
<td>Care that is guided by up-to-date evidence. Practised as evidence-based practice, which is as described by Sackett, ‘the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.’</td>
</tr>
<tr>
<td>Equitable</td>
<td>Care that is of equal quality for all cultural backgrounds, age, gender, religion, sexual orientation, disability status, region, socioeconomic status or insurance coverage. For patients to take an active role in their care, they must first feel safe to be themselves and confident that they will be understood. Clinicians must ensure care is not just ‘one-size-fits all’ and work to have a full understanding of the patient’s identity, context and cultural background. Clinicians should adapt their practice to meet varying cultural needs.</td>
</tr>
<tr>
<td>Timely</td>
<td>Care provided without extensive delay. It is not clear what the ‘right time’ might be for each individual patient. However, waiting for care leads to poor patient outcomes. Delayed care also leads to downstream costs for the healthcare system. Clinicians should strive to provide care without unnecessary delay.</td>
</tr>
</tbody>
</table>

Themes added through consensus

| Accountable               | Care that is provided with the explicit understanding of being benchmarked against standards and open to critical appraisal by peers. |
| Effective                 | Care that achieves its intended outcome. Effective care and evidence-based care are subtly different. Effective care should be evidence based, but just being evidence based is not sufficient for effective care. Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values. |

not included in our definitions or model. Other areas of disagreement are discussed under research implications.

DISCUSSION

Our study adds clinicians’ perspectives to the body of literature defining high value musculoskeletal care. For physiotherapists, high value care is care that is high quality, incorporates patient values, is cost-effective and reduces waste in the care cycle. High-quality care is safe, connected, consistent, patient-centred, evidence based, timely, equitable, effective and accountable. We provide statements from the clinical perspective to assist with the application of high value care.

Strengths and limitations

This study used RAND/UCLA methodology to reach consensus and established protocols a priori. All stages of this study (from conception to manuscript writing) were coproduced with a research network of physiotherapists, who predominantly work in private practice, which improves the credibility of our findings. However, the perspectives included in this study are unlikely be representative of all physiotherapists; our study involved members of a research network who likely share similar views and biases regarding care value and a minority of participants were female. In stage three, voting was not anonymous, and participant’s votes may have been influenced by other members. Four participants left the consensus meeting before statement 15 (on equitable care), because they had other commitments to attend. However, none of the members who left provided any disagreement with the statement on the report following the workshop.

Relation to previous literature

Our study suggests there is more to value for practising clinicians than previously documented. While there is alignment with many domains and themes described in existing literature, participants in our highlighted the importance of additional themes for effective and
accountable care in defining high value care. Previous definitions of value have focused on the economic implications of care and encompass a ratio of cost relative to care outcomes.16 51 Previous definitions also state that value can only be determined when the outcome of care is known.16 51 While the importance of care outcomes is obvious, our study highlights that clinicians think value may be achieved through the consideration of multiple domains, themes and stakeholder perspectives. This suggests that, in the eyes of clinicians, care value is a continuum that can be shaped by the process of care.

Clinical implications

Application of high value care: general information

Participants perceived high value musculoskeletal care to be a process, existing on a continuum, involving as many domains and themes as possible. Participants felt that being aware of different stakeholders’ perspectives is integral to high value care. Our study suggests that high value care must balance these potentially conflicting perspectives and anchor care decisions on achieving the optimal outcome from the patient’s perspective.

Domains of high value care

Funding structures may incentivise care options that lead to low value care (Figure 2). Most participants in our study work in the Australian private sector.63 In this setting, a clinician can either see more patients per hour or reduce the costs to deliver care to maximise their income and ensure cost-effective delivery of care.64–66 Both options typically mean the clinician spends less time with the patient, which makes high value care less likely. To apply high value care, clinicians should be aware of the levers that might lead to low value care.64–67

Removing unnecessary and wasteful care is a key contributor to high value care provision.12 13 Research on reducing waste commonly focuses on removing unnecessary tests and procedures from practice in discrete care episodes.12 13 Participants in our study expressed that a wider focus is important and reported additional wasteful elements like unnecessary referrals to other professionals. Participants also reported that it may be important to focus on clinical reasoning as a potential source of waste.

In reducing waste from care, it is also important to explicitly define low value care because clinicians can understand what to avoid and remove from practice. The idea of avoiding low value care within musculoskeletal practice has traction within the literature.68 69 Low value care has been defined as care that provides little to no benefit to patients or where the risk of harm exceeds likely benefits.70 The perspective gained in our study may assist in making the attempts at reducing waste more clinically applicable. A key component of low value care is a misalignment with both patient’s preferences and their goals (see statement 5).

A key goal of high value care is aligning care outcomes to the patient’s values and experience of health.16 25 51 Patient values have been described as ‘moral beliefs to which people appealed for the ultimate rationales of action’ (Spates et al,71 pp 3) and reflect deep-seeded motivations for behaviour and life choices.71 Values can dictate what a
patient will find valuable about the care process and care outcomes. There are tools that clinicians can employ to better align care with the patient’s values. For example, patient-reported outcome measures, patient-reported experience measures and shared decision-making tools. These tools, however, may not allow an in-depth understanding of patient’s values. Skilled communication is a key mechanism to uncover a patient’s values. Communication should involve a two-way information exchange between patient and clinician so that both parties can learn from each other’s perspective and knowledge. An in-depth information exchange may contribute positive effects to care but may also create value for the patient by improving their ability to make decisions about their health.

Applying themes of high-quality care

A requirement for high-quality care is safe care (care that does not cause patient harm). Evidence on harms from treatment has focused on biomedical harms like side effects caused by medications. While important, evidence suggests that a traditional biomedical view on harms may not capture other sources of potential harm in care provision. For example, the language used when communicating a diagnosis or imaging findings alter treatment intentions and initiate a low value treatment cascade leading to harm. In our study, participants agreed that they should look beyond commonly considered harms like medication side effects (statement 12). Participants in our study reported clinicians should strive to deliver care that is accountable. Peer review and auditing of clinical practice has promise to improve care standards. Clinicians in our study agreed that they should be open to having their practice and clinical reasoning reviewed by peers (statement 11). Discussing thought processes that lead to care decisions among peers may uncover flaws in reasoning and lead to improvements
in care. There is evidence demonstrating that clinicians may be reluctant to expose their practice to auditing, which indicates that some aspects of practice auditing may take effort. However, critical appraisal of clinical reasoning and care decisions is now hanging fruit that individual clinicians can implement without significant change to practice.

Research implications

A key direction for future research is to incorporate other stakeholder perspectives. The patient’s perspective is central to high value care; the immediate next step for future research is to involve the patient’s voice to understand their perspective on receiving high value care. Additionally, other musculoskeletal clinicians and care stakeholders should be involved to understand their perspectives. Our definitions, themes and model can function as a framework to assist in establishing a common language to discuss the concept of high value care. Following this next step, we recommend future research aims to understand the barriers and facilitators to applying our domains and themes to support better high value care application.

Our results suggest that clinicians perceive there to be a conceptual difference between the methods a clinician can successfully use to deliver evidence-based care and the traditional description of evidence-based care. However, dissenting opinion around the accompanying statements for effective care may allude to the group’s uncertainty about the specific content and application of effective care. Consensus was also low for statement 14 about evidence-based care (figure 2). Future research should determine whether other populations describe something like effective care (the skills and process of applying evidence-based care). Currently, we cannot rule out a persistent misunderstanding of the concept of Sackett’s original outline of evidence-based practice, which has been described elsewhere.

Future research on equity in primary care and physiotherapy is needed. Participants in our study described that access to private practice physiotherapy is not equitable when patients cannot cover the difference between the clinician’s fee for service and government funding options. Evidence suggests inequitable access to physiotherapy is a concern both in Australia and internationally. However, access to care is only one aspect of equity. Equity is a very broad concept and poorly defined in the literature. Dissecting opinion on statement 15 about equitable care (figure 2) may point to a lack of common language and confusion about what equity means. Researchers should first provide a common language about equity, so clinicians can consider it in their practice more often.

Policy implications

Clinicians’ input is important for policymakers because they experience first-hand the judgements and resources that contribute to successful patient outcomes. Policymakers have placed importance on clinician-led efforts to generate consensus on what constitutes low value care. Our study data provide a framework through which to establish specific recommendations about high value care. Policymakers should work with clinicians and consumers to collaboratively establish targets to incentivise high value care, which would supplement the disincentives for low value care.

Policymakers can also learn from the clinical perspective to understand systemic factors that make high value care difficult. Clinicians in our study felt that economic drivers in primary care can lead to low value care. Policymakers could trial different funding mechanisms in collaboration with care providers to determine the effects on care provision. Clinicians in our study viewed that economic factors may also impact equitable access of physiotherapy. Policymakers could consider alternate mechanisms to improve access to care.

CONCLUSION

This work highlights a clinical perspective on high value care for musculoskeletal conditions. Providing high value care was viewed by physiotherapists as a comprehensive construct that involves more than providing evidence-based care. High value care includes high-quality care (safe, connected, consistent, patient centred, evidence based, timely, equitable and accountable care), incorporates patient values, is cost-effective, and reduces waste.

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Patient consent for publication Not applicable.

Ethics approval This study involves human participants but this study was registered as low or negligible risk by the Hunter New England Research Ethics Committee (approval no AU202202-09). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

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