

# Patients' Views on the Implementation Potential of a Stratified Treatment Approach for Low Back Pain in Germany: A Qualitative Study

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Sven Karstens<sup>1</sup> , Sarah Lang<sup>2</sup> and Benjamin Saunders<sup>3</sup>

<sup>1</sup>Department of Computer Science; Therapeutic Sciences, Trier University of Applied Sciences, Trier, Germany. <sup>2</sup>MSc Sport Physiotherapy, German Sport University Cologne, Cologne, Germany.

<sup>3</sup>Primary Care Centre Versus Arthritis, School of Medicine, Keele University, Staffordshire, UK.

**ABSTRACT:** Stratified care for low back pain (LBP) has been shown to be clinically- and cost-effective in the UK, but its transferability to the German healthcare system is unknown. This study explores LBP patients' perspectives regarding future implementation of stratified care, through in-depth interviews (n = 12). The STarT-Back-Tool was completed by participants prior to interviews. Interview data were analysed using Grounded Theory. The overarching theme identified from the data was 'treatment-success', with subthemes of 'assessment and treatment planning', 'acceptance of the questionnaire' and 'contextual factors'. Patients identified the underlying cause of pain as being of great importance (whereas STarT-Back allocates treatment based on prognosis). The integration of the STarT-Back-Tool in consultations was considered helpful as long as it does not disrupt the therapeutic relationship, and was acceptable if tool results are handled confidentially. Results indicate that for patients to find STarT-Back acceptable, the shift from a focus on identifying a cause of pain and subsequent diagnosis, to prediction-orientated treatment planning, must be made clear. Patient 'buy in' is important for successful uptake of clinical interventions, and findings can help to inform future strategies for implementing STarT-Back in the Germany, as well as having potential implications for transferability to other similar healthcare systems.

**KEYWORDS:** Targeted treatment, stratified care, patients' perceptions, low back pain

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**CORRESPONDING AUTHOR:** Sven Karstens, Computer Science; Therapeutic Sciences, Trier University of Applied Sciences, Schneidershof, 54293 Trier, Germany. Email: karstens@hochschule-trier.de

## Introduction

Low back pain (LBP) is a leading cause of disability in the western world, with approximately two-thirds of the adult population experiencing at least 1 episode per year.<sup>1,2</sup> Complex biopsychosocial factors are described in the literature as influencing which patients go on to experience chronic pain problems.<sup>2</sup> Additionally, the treatment patients are offered often does not reflect current evidence.<sup>3–6</sup>

Traditional biomedical approaches have shown limited effectiveness.<sup>7,8</sup> Therefore, it has been suggested to make treatments more strongly orientated around approaches established for other chronic conditions and increasing attention was given to the interaction of biomedical with psychological and social factors.<sup>9</sup> Such an approach aims to integrate physical and psychological approaches, aiming to reduce modifiable obstacles to recovery, such as unhelpful beliefs and illness behaviours.<sup>10,11</sup> Acknowledging these challenges and offering risk-adapted therapy results in positive effects on function as well as healthcare consumption.<sup>12</sup> One approach to managing patients with LBP which is informed by the biopsychosocial model is stratified care using the STarT-Back-Approach (Subgrouping for Targeted Treatment).<sup>12–16</sup> This approach has been implemented in routine care in the UK and has shown the potential to improve quality of life with less productivity loss and no difference in direct health-care costs.<sup>13,17</sup>

In STarT-Back, stratified care involves subgrouping patients based on their prognostic risk of persistent disabling pain using

a 9-item self-report questionnaire, the STarT-Back-Tool. Each of the 3 subgroups (low-, medium- and high-risk) is matched with appropriate early treatment options.<sup>14,18</sup> Patients in the low-risk group receive minimum treatment primarily comprised of assessment and advice; patients at medium risk receive evidence-based physiotherapy; and those in the high-risk group receive 'psychologically informed' physiotherapy. This involves the integration of physical and psychological components addressing the physical capacity of the patient and any psychological obstacles to recovery.<sup>11,19</sup> Currently, in Germany stratified care is not implemented in routine healthcare.

Internationally, several projects have been conducted to implement the STarT-Back-Approach,<sup>11,13,15,20–24</sup> but much of the qualitative research to-date on stratified care for MSK pain, and LBP specifically, solely explores the views of clinicians.<sup>21,25,26</sup> Only a few studies have included patient perspectives, and these are mainly from a UK setting, exploring patient views relating to the development and pilot testing of a new stratified care intervention for a range of common MSK pain conditions and not specifically on LBP.<sup>27,28</sup> Exploration of patients' views towards the implementation of stratified care in routine clinical practice specifically for patients with LBP, may bring about different issues. Additionally, there are differences between the UK National Health Service and other international services like the German healthcare system,<sup>3</sup> which means that the views of UK-based patients may not translate to those other settings.



Physiotherapy clinics in Germany are usually privately owned. The therapist is paid according to the number of visits made. The vast majority of patients have statutory health insurance which pays for treatment,<sup>29</sup> but before consultation with a physiotherapist, patients with LBP in Germany usually need a referral from a physician.<sup>30</sup> A standard referral comprises up to 6 treatment sessions, but treatment can be extended by the physician.<sup>31</sup>

To prepare for the implementation of the STarT-Back-Approach in Germany, we previously conducted qualitative studies with physicians and physiotherapists in order to establish barriers and enablers to the use of the STarT-Back-Approach in routine practice. Both clinician groups reported that stratified care for LBP was potentially acceptable, and showed a willingness for piloting stratified care.<sup>3,32</sup> However, the need to ensure that treating therapists be qualified to conduct psychologically informed therapy, especially when working with patients with an unfavourable prognosis due to the presence of complex biopsychosocial predictors was stressed. Moreover, another clear theme was that certain regulatory factors, for example, remuneration and directives on the duration of treatment sessions, would require adaptation.<sup>3,32</sup>

It is important to also understand patients' perspectives on transferability of stratified care to the German healthcare system. Through exploring patients' views, this paper looks to further contribute to the evidence base regarding barriers and enablers to implementation of the STarT-Back-Approach in the healthcare system. Moreover, such knowledge will enable physicians and physiotherapists to better inform patients during the shared decision process when discussing psychologically informed treatment as an option.

The objective of this study was therefore to explore the perspectives of patients with low back pain regarding the possible future implementation of the STarT-Back-Approach in order to understand any perceived potential barriers and enablers regarding the use of the STarT-Back-Tool in clinical practice.

## Methods

### *Study design*

This study adopts a qualitative approach, informed by principles of Grounded Theory, a rigorous methodological approach which enables the inductive development of conceptual insights grounded in empirical data.<sup>33</sup> An advantage of grounded theory is its across-case focus, enabling the identification of patterns across the dataset through 'constant comparison' between participants' accounts. Whilst classical grounded theory is rooted in a post-positivist paradigm, privileging objectivity and neutrality in the analysis of data, we follow the approach outlined by Strauss and Corbin, in which researchers use the knowledge gained from previous related projects, professional knowledge and from the literature, to inform the ongoing analysis.<sup>34,35</sup>

As part of this approach, semi-structured interviews were conducted with LBP patients to explore in-depth their

perspectives towards the STarT-Back-Approach, within the context of their own personal experiences of LBP and of physiotherapy treatment. Interviews were considered to be the most suitable method of data-collection – for instance when compared to focus groups – as they allow participants the opportunity to fully express their subjective views and experiences. Though we acknowledge the benefits of a focus group approach, this depth of individual experience can be more difficult to gain in a group setting. Moreover, some participants feel more comfortable sharing personal views in a one-to-one interview, which was important in this study, since psychological factors were discussed.<sup>36,37</sup>

### *Participant recruitment*

Participants with nonspecific LBP of any duration, aged 18 and over were considered for participation. Patients were not eligible if they had undergone spinal surgery within the past 18 months or were not able to read and understand a questionnaire. Patients were invited to participate through 3 physiotherapy clinics from 2 different federal states, accessed through the researchers' clinical networks. Patients were initially asked by physiotherapy staff if they would be willing to participate and if they were, information about the study was given by one of the authors (SL). A purposeful sampling approach was adopted, considering age, profession, gender, treatment sessions received and STarT-Back subgroup (low-, medium-, high-risk of persistent disabling pain) to facilitate wide variety of perspectives.<sup>38</sup> Interviews took place in the clinics the patients had originally attended. All patients completed the STarT-Back-Tool before the interviews took place, but they were not treated according to the STarT-Back-Approach.

All participants provided written informed consent before participation, and ethical approval was obtained from the Ethics Committee of the University of Heidelberg (registration ID: S-414/2013).

### *Data collection*

The interviews were conducted by one of the authors (SL, a musculoskeletal physiotherapy practitioner). A trained and experienced facilitator participated during the first 4 interviews (SK, researcher and educator with experience in graduate and post-graduate pain-management training). Each interview began with the researchers giving a 10-minute presentation to the patient about the STarT-Back-Approach and related research (see Table 1 for a description of the presentation content). Following this, interviews were carried out using a semi-structured topic guide.<sup>37</sup>

The process of topic guide development was informed by our previous qualitative work with physicians and physiotherapists.<sup>3,32</sup> Four primary questions were chosen as a starting point for the interviews (see Table 2). Further, nonspecific prompts (What other . . .? What else . . .?) were used to invite the

**Table 1.** Introductory presentation content.

Risk-factors for reappearing and persistent low back pain Subgrouping using STarT-Back-Tool - Content and purpose - Definition of Subgroups STarT-Back-Approach - Differential diagnosis - treatments matched with subgroups - training of therapists Results STarT-Back-Trial <sup>14</sup>
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**Table 2.** Primary interview questions.

(1) How would you feel about being treated using the STarT-Back-Approach?
(2) In your opinion, what barriers do you feel there may be to the use of the STarT-Back-Approach in clinical practice?
(3) What do you think about the treatment approach for patients at a low risk for ongoing complaints?
(4) What do you think about the treatment approach for patients with complex risk factors? (in line with the literature the term 'complex' was preferred over 'high-risk' when working with patients) <sup>19</sup>

participant to keep talking about the topic and in this way to facilitate the flow of the discussion.<sup>39</sup> To develop these, results from previous studies with therapists and physicians, and the consolidated framework for advancing implementation science were reflected.<sup>40</sup> Topic areas included perceptions of the STarT-Back-Approach, the degree to which it aligns with patients' needs and priorities, clinical organisation and the perceived impact on communication with the clinician.

### Data analysis

The interviews were audiotaped, and, in part, handwritten field notes were taken to support transcription and to capture early impressions. The audio-recordings were transcribed by the interviewer. A verbatim style similar to that described by Dresing and Pehl was followed.<sup>41</sup> Transcripts were anonymised, and checked in comparison with the audio-files by 2 of the authors (SK, SL). To assist transcription, F4-Transcript was used.<sup>42</sup>

Data-collection and analysis were carried out iteratively in a way that allowed early findings to inform the subsequent data-collection. The analysis was based on the principles of Grounded Theory, as defined by Strauss and Corbin.<sup>33,34</sup> Briefly, this methodological approach entails developing theory in an inductive manner following a structured set of stages.<sup>33,34,43</sup>

Analysis began with the researchers becoming familiar with the data through multiple detailed readings and discussions about their first impressions of the interviews and transcripts (SL, SK). The transcripts were broken down into individual meaningful passages, and paraphrases were developed. Next, units of meaning were built, merging related paraphrases to themes and subthemes. The subthemes were tested against the

data, with more detailed explication following. Core themes and quotes supporting each identified theme were then chosen. The emerging themes and subthemes were determined through discussions among the members of the research group iteratively. To assist the coding process electronically, the RQDA package in R was used (<http://rqda.r-forge.r-project.org/><sup>44</sup>).

## Results

### Participant characteristics

Interviews were conducted with 12 patients with LBP, half of whom were male. The mean age of participants was 52 years (SD 11.8). At the time of the interviews, 11 patients were receiving physiotherapy treatment, while 1 patient was interviewed before receiving treatment but with an appointment for physiotherapy. The interviews lasted between 29 and 64 minutes (average 43 minutes). In terms of the STarT-Back-subgrouping, 8 patients were classified as low-risk, 2 were medium-risk and 2 were high-risk. Four patients were blue collar workers and 4 were white collar workers, 3 were retired and 1 was a housewife. Two of the participants were treated by one of the authors (SL) who also conducted the interviews.

### Principal findings

The overarching theme identified from the data regarding the implementation of the STarT-Back-Approach was 'treatment-success'. Additionally, the subthemes 'Assessment and treatment planning', 'acceptance of the questionnaire' and 'contextual factors' were developed.

In the next section the overarching theme will be described, followed by the presentation of the subthemes and their underpinning constructs with quotes from the data provided to illustrate the analytic points.

*Treatment success.* Treatment success refers to the goal patients are aiming for from their treatment, and how they interpret successful outcomes based on the treatments they have received. Perceived treatment success was found to be influenced by the following subthemes, 'Assessment and treatment planning', 'acceptance of the questionnaire' and 'contextual factors', which are described in full below.

*Assessment and treatment planning.* This subtheme refers to the participants' perspectives towards receiving clinical assessments to identify the cause of their complaint and the need to rule out Red flag symptoms. It is shown how, from their perspective, the STarT-Back-Approach could influence assessment and treatment planning, and how this may differ from current practice.

Patients' acceptance of the treatment approach was found to be related to their aim of being treated successfully and quickly recovering. Some of the participants reported they believed the STarT-Back-Approach had the potential to assist the physiotherapist to better tailor treatment to their needs, which, in

turn, they expected to lead to more rapid recovery. From the participants' point of view, it was important that the cause of their pain be identified to rule-out other serious diseases. The patients wanted to be treated in line with a patient-centred approach, with some stating that the care they had previously experienced did not align with this expectation:

Pf4\*: . . . I am of the impression that they already have put more thought into [the STarT-approach] and that this targeted [treatment] somehow for the patient is more beneficial. It is also faster, a cure may also occur faster, because it is more specific from the beginning on. (\* Participant ID, f: female)

Pf12: . . . and here you really go into detail to find out 'where is the back pain actually coming from? What are the causes?' And I think this is really not done these days. And that's what I like about this concept.

Pm3: And for me it was important to rule out that it may not be something else [ . . . ] could have been the kidney. [ . . . ] because then I went out [of the clinic] with the impression that the doctor had hit the right thing and said that it is a muscular re-strain. And then I assume it will get better.

Other participants described their belief that current procedures within physician clinics already resemble a stratification process, except with a clinical examination instead of a questionnaire. They therefore did not see the approach as having added value when compared to usual care:

Pm8: Because I can't see what is dramatically different [between the STarT-Back-Approach and usual care]. Except that you are formally . . . I mean I understand what is supposed to happen. But, what will it gain? Whether I am formally sorted [in]to a group or whether I am sorted during the course of treatment somehow.

The questions in the STarT-Back-Tool were deemed too general by a few of the patients. They felt the need to fill in details for it to be useful and were concerned that, due to missing information, an incorrect therapy recommendation could result. They also stressed their perspective regarding the relevance of a combination with a clinical examination.

Pm8: . . . you tick an answer knowing exactly: 'actually, I would need to explain it, how do I mean that exactly'.

Pf4: . . . if I fill out this questionnaire – I don't know how anyone can say 'Well, Mrs. X, this and that is going to help her'.

Pm7: Yes, to be able to reasonably plan treatment [ . . . ] I am definitely convinced that an examination is important.

*Acceptability of the questionnaire.* This subtheme refers to participants' perspectives on the acceptability of the STarT-Back tool being used in routine consultations, as well as, how the use of the tool influences their confidence in practitioners.

The participants discussed the potential future use of the STarT-Back-Tool in the context of their previous healthcare

experiences. The acceptability of questionnaires in general was related to previous experiences of using questionnaires for different conditions or purposes. Patients with such experiences indicated that they saw questionnaires as a routine aspect of healthcare and therefore the STarT-Back-Tool would not feel out of place as part of a physiotherapy consultation:

Pm6: I have been there many times, at the orthopaedic or in the hospital; before I underwent surgery, there was a very detailed questionnaire [ . . . ] as well as the doctor gave me a detailed questionnaire. Well, I would definitely support it [use of STarT-Back-Tool]; I can well imagine filling it out.

Patient-clinician communication was highly valued. From the point of view of some participants, the introduced questionnaire can support the anamnesis. It was expected that the findings would be explained to the patient. However negative attitudes towards the use of questionnaires were also expressed by some patients, expressing anxiety, that the communication might be negatively influenced.

Pf4: [ . . . ] then it is already filled out when I enter the physicians room and the information would then already be there.

Pf12: And maybe I would have the feeling 'it's only put into the file-drawer'. It would be important to me that the doctor talks me through the points [ . . . ]

Pf4: [ . . . ] I think you should still have this conversation and it shouldn't become too superficial between patient and doctor.

Patients stated that the use of a questionnaire may lead to concerns about the competency of the physician due to a potential over-reliance on the questionnaire to determine treatment decisions:

Pm2: I would prefer that I ask a question and he says 'you take the pills and do this and that and then everything will be fine'. Now he foists a questionnaire on me. That's [like] 'wait a minute—do they want to sell me something? Is he [the physician] uncertain [about what he is doing]? Or why do I have to complete the questionnaire?'

The topic 'confidentiality' was important to the participants. The STarT-Back-Tool provides insight into the emotional well-being of a patient, and participants expressed that they did not want this information to be given to third parties. It was suggested, that such details and scoring should be handled by a physiotherapist or physician. It was even discussed whether the questionnaire could be given to the patient at clinic reception and whether the scoring could be conducted by medical assistants. The competence to assign a patient to a treatment-group is expected of physicians or physiotherapists.

Pf4: In general, if the medical assistant gives me the questionnaire and I fill it out, then I would expect that the doctor also looks at it and then maybe talks to me about it.



Pm7: Because here and there, there are some intimate questions, [i.e.] ‘do you have back pain at the moment?’ or ‘dressing more slowly than usual’. So, in my opinion, only a therapist or a treating physician should see that and not a medical assistant [ . . . ].

*Contextual factors.* This subtheme describes contextual factors which were deemed relevant to the participants for implementation of the approach. Positive and negative influences of cost-pressure as a contextual factor will be presented and patients’ views on how STarT-Back may facilitate interprofessional communication.

There were several contextual factors highlighted in the interviews, primarily related to the perceived cost pressure and views on interprofessional communication. Some worried that in general, cost pressure, especially applied to physicians, would have greater influence on treatment decisions than therapeutic considerations and necessity. Additionally, the need to ‘beg’ (Pm3) for physiotherapy was also reported from a patient’s previous experience, and the patients anticipated that the STarT-Back-Approach could make it easier to get a referral in the future, as it would assist the physician in justifying writing a referral, if its necessity could be confirmed by the STarT-Back-Score.

Pf12: If the doctor is no longer paid for cost-effectiveness but instead how he helps the patient in the best possible way, as it once was, then that could change.

Pm2: [ . . . ] but I realize how much overall a patient having statutory health insurance [and not private insurance] needs to fight to get a referral for therapy [ . . . ] Here [with the STarT-Back-Tool], I would see a clear decision aid for those [physicians] who finally write the referral and at the same time care financially.

On the other hand, some participants expressed reservations about the STarT-Back-Approach, fearing that cost-effectiveness would be deemed more important when implementing the approach than the patient’s well-being; and that particularly for low risk patients (who primarily receive education and advice around self-management), this could result in treatment being withheld:

Pm8: All in all this sounds very much like trying somehow to get the patients out of the system and that somehow, they can handle it on their own. Looks like they want to reduce costs and give it a beautiful shine [ . . . ]

Moreover, it was anticipated that there might be patients who would try to receive the most comprehensive therapy possible by manipulating their STarT-Back-Score. In other words, patients could try to be placed in the medium- or high-risk-group, even if truthful answering would result in an allocation to the low-risk-group:

Pm8: [ . . . ] that seems to me then to become a problem under certain circumstances, if the patients know that they have benefits in some way if they are among the problem patients, then you might try to get in there.

The patients associated the contextual aspect of interprofessional communication with treatment satisfaction and success based on a shared treatment regime. From their perspective, the Start-Back-Approach could facilitate greater communication between physiotherapists and physicians, which they felt could lead to better treatment outcomes:

Pm2: [ . . . ]my wife [has had] knee surgery [ . . . ] But communication between a therapist and doctor probably does not take place at all [ . . . ] But what I like about this concept [i.e. STarT-Back] is that one says as a therapist ‘I realize now I don’t achieve any progress’ and sends him [the patient] back to the doctor.

Pf12: [ . . . ] because of the structure [of the STarT-Back-Approach], it is well organized [ . . . ], it’s simplified. I think this concept is easier in comparison with how it is organized today. And the doctor and therapist, if all this would be collaborative, then it would also be beneficial for the patient, because then he would feel well cared for [ . . . ]

## Discussion

This study explored the perspectives of patients towards the implementation of stratified care in routine practice. The overarching theme ‘treatment success’ was identified, which included the subthemes ‘identification of the cause’, ‘acceptance of the questionnaire’ and ‘contextual factors: cost-effectiveness and interprofessional communication’.

Patients’ beliefs about the treatment of LBP are clearly influenced by the traditional biomedical model.<sup>45</sup> The results indicate that the basing treatment decisions on prognosis risk instead of diagnosis was difficult to understand.<sup>46</sup> From their point of view, treatment success was connected to the identification of the structural deficit to be corrected.<sup>9</sup> This is in line with findings from the UK, where physicians and patients have described the need to establish a diagnosis.<sup>27</sup> However, this patient belief contrasts with literature suggesting that there is a poor correlation between findings from imaging and symptoms reported by patients with nonspecific LBP.<sup>47,48</sup> In the vast majority of cases, it is not possible to identify a clear patho-anatomical correlate.<sup>49,50</sup> Overcoming beliefs that diagnosis is necessary for informing LBP management is therefore key to patients seeing the STarT-Back-Approach as acceptable.

In line with the biomedical mindset described, some patients questioned whether the questionnaire reflects all the factors that might be necessary for an accurate prognosis. In clinical practice, this concern should be addressed by reassuring the patient that the STarT-Back-Tool is only one component of the consultation, and is not intended to replace other elements of it. History-taking and clinical examination, would therefore still be carried out to allow interventions to be individualised to both physical and psychosocial constructs.<sup>14,19</sup> Additionally, it may be possible when talking to patients for clinicians to further unpack the concept of prognosis, in order to highlight where the strengths of the STarT-Back-Tool lies. For instance,

it has been found that the tool's predictive ability is better for persistent disabling pain than for other outcomes.<sup>51-53</sup>

Communication with the clinician in consultations was described by the patients as being of particular importance. This is in line with the pain science literature describing it as an important step to build an alliance with the patient.<sup>54</sup> Moreover, physicians as well as physiotherapists emphasised the relevance of personal communication when discussing stratified care.<sup>3,32</sup> Some participants deemed that the items of the STarT-Back-Tool are too general and they feared that implementation of a questionnaire might negatively influence communication. However, the STarT-Back-Tool is intended to supplement physician-patient communication, and can provide relevant cues, which could be further explored. Especially for the treatment of patients with complex biopsychosocial predictors, the STarT-Back-Approach can provide a starting point, with the therapist using stem and leaf questions which build on the answers given to the items of the STarT-Back-Tool to structure the anamnesis.<sup>19</sup> In previous studies physiotherapists, physicians as well as patients described positive experiences or expectations for such a use of the STarT-Back-Tool.<sup>3,27,28</sup>

The participants' perceptions about which professional should carry out the risk stratification varied. It was stated that physicians, like physiotherapists, could do it, while some questioned if the job could be done by clinic assistants. In the future, with electronic versions of the tool at hand, scoring could take place automatically and could easily be done by therapists and physicians.<sup>55</sup> Still, to reduce this barrier, clinic staff should be made aware of the possible concerns of patients. Before application, patients should be reassured that their data will be handled confidentially.

Difficulties in receiving a referral for physiotherapy in the current healthcare system were described by participants. Corresponding barriers for referral have also been reported by physicians, and the idea that the tool could assist the physician to overcome such barriers was discussed.<sup>32</sup> With its evidence base, it might support physicians by granting them justification to provide a referral when the need for treatment is indicated by the STarT-Back-Tool.

Another contextual factor discussed was the concern that the approach might only be implemented to cut costs. Studies on the cost-effectiveness of the STarT-Back-Approach indicate that a reduction of costs is possible,<sup>13,14</sup> and, from a socio-economic perspective, this is an important facilitator for its implementation.<sup>56,57</sup> However, costs are not only cut, but reallocated from low- to high-risk patients.<sup>19</sup> This means more intensive and costlier treatments are recommended only for those at high risk and not for patients whose pain is likely to be self-limiting.<sup>14</sup> For low-risk patients, Linton et al. have described the process as a chance to decrease possibly harmful overtreatment.<sup>58</sup> Therefore, patients should be reassured that the aim associated with the STarT-Back-Approach is not only to cut costs, but principally to ensure patients receive the most appropriate treatment in a timely manner. Moreover, research

has shown, that agreement between the risk profile of patients and the treatment decision of practitioners is poor.<sup>59</sup> The avoidance of unnecessary costs still is an important aspect supporting implementation.

Moreover, deficits in interprofessional collaboration in current care were described by the participants, an issue also highlighted by physiotherapists like physicians in previous work.<sup>3,32</sup> The patients in this study felt that the STarT-Back-Approach could facilitate closer interprofessional working. This potential for 'integrated care' was also highlighted by physicians and physiotherapists in earlier studies, suggesting all 3 stakeholder groups saw it as a potential benefit, if the STarT-Back-Approach was to be implemented in routine practice.<sup>3,32</sup>

### *Strengths and weaknesses*

All participants had received physiotherapy or a referral for physiotherapy and therefore were able to discuss their views on the STarT-Back-Approach within the context of their experiences of usual care for LBP. The impression of the corresponding treatment resulted from the ticking of the questionnaire and from the presentation and could possibly change after experiencing stratified care in clinical routine. Given that this was an exploratory study in preparation for implementation, and that STarT-Back is not currently in widespread use in Germany, it was not possible to interview patients who had already received treatment according to the STarT-Back-Approach. Nevertheless, the results shed light on important factors that would need to be taken into account for implementation, in order to ensure that patients fully engage with the approach and its treatment recommendations.

As outlined earlier in the methods, the presentation given to patients prior to interviews included the results of the UK-based StarT-Back-Trial, which found the approach to be clinically and cost-effective when compared to usual care.<sup>14</sup> A subsequent US-based trial found that the STarT-Back-Approach did not lead to superior clinical outcomes.<sup>22</sup> It must be acknowledged that only presenting trial results showing positive outcomes may have influenced patients' perceptions of the approach. Both researchers directly involved in the interviews were physiotherapists and 1 (SL) had very sporadic contact with 2 of the patients during their treatment. This might have led to social desirability, with these patients providing the responses that they think the interviewer wants. However, reflection on the participant excerpts showed that an environment was created during the interviews in which the patients felt free to critically discuss stratified care.

### **Conclusion**

The findings from this study have implications for the implementation of stratified care for LBP, particularly in terms of the ways in which stratified care is presented and communicated to patients by clinicians in German health care. Moreover, the results will enable further international comparisons, although, it should

be noted that the aim of this study was to generate an in-depth understanding of patients' views in order to inform future implementation strategies, not to generalise to other populations.

Therapists may use the presented facilitators to benefit acceptance of stratified care in clinical practice. In terms of treatment, it has to be recognized that the biomedical model influences patients' perceptions strongly. This possibly makes it difficult for them to understand the shift from diagnosis to prediction-orientated treatment planning. Therapists need to be aware of this when introducing the STarT-Back-Approach to patients. To facilitate acceptance, it should be clarified to patients that the tool used for stratification is not substituting other elements of the consultations such as history-taking and examination, and is intended to support, not replace, clinical decision-making. It will also be important to reassure patients that the use of stratified care is not only about cost-saving, but the reallocation of resources to ensure patients receive the most appropriate treatment at the earliest possible stage. Having developed an understanding of patients' perspectives towards stratified care, future research will be needed to understand patients' and clinicians' experiences of using the STarT-Back-Approach in routine clinical practice.

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## Author Contributions

Conceived and designed the study: SK, SL and BS.

Collected the data: SK and SL.

Analyzed the data: SK, SL and BS.

Wrote the manuscript: SK and BS.

Critically revised the manuscript: SL.

## ORCID iD

Sven Karstens  <https://orcid.org/0000-0001-7403-3452>

## REFERENCES

- Hoy D, March L, Brooks P, et al. The global burden of low back pain: estimates from the Global Burden of Disease 2010 study. *Ann Rheum Dis.* 2014;73:968-974. doi:10.1136/annrheumdis-2013-204428
- Hurwitz EL, Randhawa K, Yu H, Cote P, Haldeman S. The Global Spine Care Initiative: a summary of the global burden of low back and neck pain studies. *Eur Spine J.* 2018;27:796-801. doi:10.1007/s00586-017-5432-9
- Karstens S, Kuithan P, Joos S, et al. Physiotherapists' views of implementing a stratified treatment approach for patients with low back pain in Germany: a qualitative study. *BMC Health Serv Res.* 2018;18:214. doi:10.1186/s12913-018-2991-3
- Werber A, Schiltewolf M. Treatment of lower back pain—the gap between guideline-based treatment and medical care reality. *Healthcare (Basel, Switzerland).* 2016;4:44. doi:10.3390/healthcare4030044
- Stevens ML, Lin CC, de Carvalho FA, Phan K, Koes B, Maher CG. Advice for acute low back pain: a comparison of what research supports and what guidelines recommend. *Spine J.* 2017;17:1537-1546. doi:10.1016/j.spinee.2017.05.030
- Mafi JN, McCarthy EP, Davis RB, Landon BE. Worsening trends in the management and treatment of back pain. *JAMA Intern Med.* 2013;173:1573-1581. doi:10.1001/jamainternmed.2013.8992
- Lewis J, O'Sullivan P. Is it time to reframe how we care for people with non-traumatic musculoskeletal pain? *Br J Sports Med.* 2018;52:1543-1544. doi:10.1136/bjsports-2018-099198
- Pransky G, Buchbinder R, Hayden J. Contemporary low back pain research – and implications for practice. *Best Pract Res Clin Rheumatol.* 2010;24:291-298. doi:10.1016/j.berh.2010.01.001
- Lewis J, O'Sullivan P. Is it time to reframe how we care for people with non-traumatic musculoskeletal pain? *Br J Sports Med.* 2018;52:1543-1544. doi:10.1136/bjsports-2018-099198
- Foster NE, Hill JC, O'Sullivan P, Hancock M. Stratified models of care. *Best Pract Res Clin Rheumatol.* 2013;27:649-661. doi:10.1016/j.berh.2013.10.005
- Sowden G, Hill JC, Morso L, Louw Q, Foster NE. Advancing practice for back pain through stratified care (STarT back). *Braz J Phys Ther.* 2018;22:255-264. doi:10.1016/j.bjpt.2018.06.003
- Meyer C, Denis CM, Berquin AD. Secondary prevention of chronic musculoskeletal pain: a systematic review of clinical trials. *Ann Phys Rehabil Med.* 2018;61:323-338. doi:10.1016/j.rehab.2018.03.002
- Foster NE, Mullis R, Hill JC, et al. Effect of stratified care for low back pain in family practice (IMPACT back): a prospective population-based sequential comparison. *Ann Fam Med.* 2014;12:102-111. doi:10.1370/afm.1625
- Hill JC, Whitehurst DG, Lewis M, et al. Comparison of stratified primary care management for low back pain with current best practice (STarT back): a randomised controlled trial. *Lancet.* 2011;378:1560-1571. doi:10.1016/S0140-6736(11)60937-9
- Beneciuk JM, George SZ. Pragmatic implementation of a stratified primary care model for low back pain management in outpatient physical therapy settings: two-phase, sequential preliminary study. *Phys Ther.* 2015;95:1120-1134.
- Al Zoubi FM, French SD, Patey AM, Mayo NE, Bussieres AE. Professional barriers and facilitators to using stratified care approaches for managing non-specific low back pain: a qualitative study with Canadian physiotherapists and chiropractors. *Chiropr Man Therap.* 2019;27:68. doi:10.1186/s12998-019-0286-3
- Bamford A, Nation A, Durrell S, Andronis L, Rule E, McLeod H. Implementing the Keele stratified care model for patients with low back pain: an observational impact study. *BMC Musculoskelet Disord.* 2017;18:66. doi:10.1186/s12891-017-1412-9
- Karran EL, McAuley JH, Traeger AC, et al. Can screening instruments accurately determine poor outcome risk in adults with recent onset low back pain? a systematic review and meta-analysis. *BMC Med.* 2017;15:13. doi:10.1186/s12916-016-0774-4
- Sowden G, Hill JC, Konstantinou K, et al. Targeted treatment in primary care for low back pain: the treatment system and clinical training programmes used in the IMPACT Back study (ISRCTN 55174281). *Fam Pract.* 2012;29:50-62. doi:10.1093/fampra/cmr037
- Morso L, Schiottz-Christensen B, Sondergaard J, et al. The effectiveness of a stratified care model for non-specific low back pain in Danish primary care compared to current practice: study protocol of a randomised controlled trial. *Trials.* 2018;19:315. doi:10.1186/s13063-018-2685-5
- Hsu C, Evers S, Balderson BH, et al. Adaptation and implementation of the STarT back risk stratification strategy in a US health care organization: a process evaluation. *Pain Med.* 2019;20:1105-1119. doi:10.1093/pm/pny170
- Cherkin D, Balderson B, Wellman R, et al. Effect of low back pain risk-stratification strategy on patient outcomes and care processes: the MATCH randomized trial in primary care. *J Gen Intern Med.* 2018;33:1324-1336. doi:10.1007/s11606-018-4468-9
- Hall JA, Jowett S, Lewis M, Oppong R, Konstantinou K. The STarT back stratified care model for nonspecific low back pain: a model-based evaluation of long-term cost-effectiveness. *Pain.* Published online August 27, 2020. doi:10.1097/j.pain.0000000000002057
- Murphy SE, Blake C, Power CK, Fullen BM. Comparison of a stratified group intervention (STarT Back) with usual group care in patients with low back pain: a nonrandomized controlled trial. *Spine (Phila Pa 1976).* 2016;41:645-652. doi:10.1097/brs.0000000000001305
- Caeiro C, Canhao H, Paiva S, et al. Interdisciplinary stratified care for low back pain: a qualitative study on the acceptability, potential facilitators and barriers to implementation. *PLoS One.* 2019;14:e0225336. doi:10.1371/journal.pone.0225336
- Sanders T, Foster NE, Ong BN. Perceptions of general practitioners towards the use of a new system for treating back pain: a qualitative interview study. *BMC Med.* 2011;9:49. doi:10.1186/1741-7015-9-49
- Saunders B, Bartlam B, Foster NE, Hill JC, Cooper V, Protheroe J. General practitioners' and patients' perceptions towards stratified care: a theory informed investigation. *BMC Fam Pract.* 2016;17:125. doi:10.1186/s12875-016-0511-2
- Saunders B, Hill JC, Foster NE, et al. Stratified primary care versus non-stratified care for musculoskeletal pain: qualitative findings from the STarT MSK feasibility and pilot cluster randomized controlled trial. *BMC Fam Pract.* 2020;21:31. doi:10.1186/s12875-020-1098-1
- Ärztblatt. [Nearly nine millions privately insured]. July 30, 2017. Accessed July 30, 2017. <https://www.aerzteblatt.de/nachrichten/52395/Fast-neun-Millionen-Privatversicherte-in-Deutschland>



30. WIdO. Therapy report 2009/2010. *AOK-Bundesverband GbR*; 2009.
31. Karstens S, Weiler SW, Frobose I, Peters-Klimm F. [Prescriptions in outpatient physiotherapy for low back pain - descriptive analysis to relate indication key and everyday impairment]. *Rehabilitation (Stuttg)*. 2013;52:96-102. Heilmittelverordnungen in der ambulanten Physiotherapie bei Rückenbeschwerden - deskriptive Analyse zum Abgleich von Indikationsschlüssel und Alltagsbeeinträchtigung. doi:10.1055/s-0032-1323668
32. Karstens S, Joos S, Hill JC, Krug K, Szecsenyi J, Steinhäuser J. General practitioners views of implementing a stratified treatment approach for low back pain in Germany: a qualitative study. *PLoS One*. 2015;10:e0136119. doi:10.1371/journal.pone.0136119
33. Corbin JM, Strauss AL. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Sage; 2015.
34. McCann TV, Clark E. Grounded theory in nursing research: part 1—methodology. *Nurse Res*. 2003;11:7-18.
35. Corbin JM, Strauss A. Grounded theory research: procedures, canons, and evaluative criteria. *Qual Sociol*. 1990;13:3-21. doi:10.1007/BF00988593
36. Onwuegbuzie AJ, Dickinson WB, Leech NL, Zoran AG. A qualitative framework for collecting and analyzing data in focus group research. *Int J Qual Methods*. 2009;8:1.
37. DiCicco-Bloom B, Crabtree B. The qualitative research interview. *Med Educ*. 2006;40:314-321. doi:10.1111/j.1365-2929.2006.02418.x
38. Palinkas LA, Horwitz SM, Green CA, Wisdom JP, Duan N, Hoagwood K. Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Adm Policy Ment Health*. 2015;42:533-544. doi:10.1007/s10488-013-0528-y
39. Brewer DD. Supplementary interviewing techniques to maximize output in free listing tasks. *Field Methods*. 2002;14:108-118. doi:10.1177/1525822X02014001007
40. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci*. 2009;4:50. doi:10.1186/1748-5908-4-50
41. Dresing T, Pehl T. [Practice book interview and transcription]. Accessed October 30, 2017. [www.audiotranskription.de/praxisbuch](http://www.audiotranskription.de/praxisbuch)
42. audiotranskription. *f4transkript*. quick transcription. Accessed August 22, 2020. <https://www.audiotranskription.de/english>
43. Vollstedt M, Rezat S. An introduction to grounded theory with a special focus on axial coding and the coding paradigm. In: Kaiser G, Presmeg N, eds. *Compendium for Early Career Researchers in Mathematics Education*. Springer International Publishing; 2019: 81-100.
44. R Development Core Team. R: a language and environment for statistical computing. R Foundation for Statistical Computing. Accessed May 28, 2015. <http://www.R-project.org>
45. Yuill C, Crinson I, Duncan E. *Key Concepts in Health Studies*. SAGE; 2010.
46. Hemingway H, Croft P, Perel P, et al. Prognosis research strategy (PROGRESS) 1: a framework for researching clinical outcomes. *BMJ*. 2013;346:e5595. doi:10.1136/bmj.e5595
47. Lateef H, Patel D. What is the role of imaging in acute low back pain? *Curr Rev Musculoskelet Med*. 2009;2:69-73. doi:10.1007/s12178-008-9037-0
48. Ract I, Meadeb JM, Mercy G, Cuff F, Husson JL, Guillin R. A review of the value of MRI signs in low back pain. *Diagn Interv Imaging*. 2015;96:239-249. doi:10.1016/j.diii.2014.02.019
49. Koes BW, van Tulder MW, Thomas S. Diagnosis and treatment of low back pain. *BMJ (Clinical research ed)*. 2006;332:1430-1434. doi:10.1136/bmj.332.7555.1430
50. Hartvigsen J, Hancock MJ, Kongsted A, et al. What low back pain is and why we need to pay attention. *Lancet*. 2018;391:2356-2367. doi:10.1016/s0140-6736(18)30480-x
51. Beneciuk JM, George SZ. Adding physical impairment to risk stratification improved outcome prediction in low back pain. *Phys Ther*. Published online September 24, 2020. doi:10.1093/ptj/pzaa179
52. Medeiros FC, Salomão EC, Costa LOP, et al. Use of the STarT back screening tool in patients with chronic low back pain receiving physical therapy interventions. *Braz J Phys Ther*. Published online July 29, 2020. doi:10.1016/j.bjpt.2020.07.004
53. Forsbrand M, Grahb N, Hill JC, Petersson IF, Sennhed CP, Stigmar K. Comparison of the Swedish STarT back screening tool and the short form of the Örebro Musculoskeletal Pain Screening Questionnaire in patients with acute or subacute back and neck pain. *BMC Musculoskelet Disord*. 2017;18:89. doi:10.1186/s12891-017-1449-9
54. Diener I, Kargela M, Louw A. Listening is therapy: patient interviewing from a pain science perspective. *Physiother Theory Pract*. 2016;32:356-367. doi:10.1080/09593985.2016.1194648
55. Institute of Primary Care and Health Sciences, Keele University, Keele/Stokeon-Trent, United Kingdom. STarT Back: SB tool online. Accessed December 1, 2018. <http://www.keele.ac.uk/sbst/startbacktool/sbtoolonline/>
56. Yoon J. Including economic evaluations in implementation science. *J Gen Intern Med*. 2020;35:985-987. doi:10.1007/s11606-020-05649-w
57. Roberts SLE, Healey A, Sevdalis N. Use of health economic evaluation in the implementation and improvement science fields—a systematic literature review. *Implement Sci*. 2019;14:72. doi:10.1186/s13012-019-0901-7
58. Linton SJ, Nicholas MK, MacDonald S, Boersma K, Bergbom S, Maher C. The role of depression and catastrophizing in musculoskeletal pain. *Eur J Pain*. 2011;15:416-422. doi:10.1016/j.ejpain.2010.08.009
59. Bier JD, Sandee-Geurts JJW, Ostelo R, Koes BW, Verhagen AP. Can primary care for back and/or neck pain in the Netherlands benefit from stratification for risk groups according to the STarT back tool classification? *Arch Phys Med Rehabil*. 2018;99:65-71. doi:10.1016/j.apmr.2017.06.011