

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Exploring usual care for patients with low back pain in primary care: a cross-sectional study of general practitioners, physiotherapists and chiropractors
<b>AUTHORS</b>	Madsen, Simon; Morsø, Lars; Vach, Werner; Kirstine Andersen, Merethe; Lykkegaard, Jesper; Schiøttz-Christensen, Berit; Stochkendahl, Mette

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Julie Fritz University of Utah, Physical Therapy and Athletic Training
<b>REVIEW RETURNED</b>	22-Feb-2023

<b>GENERAL COMMENTS</b>	<p>The purpose of this manuscript is to describe the composition of usual care for patients with LBP provided by general practitioners (GPs), physiotherapists (PTs) and chiropractors (DCs) in Denmark. The study addresses an important topic for both researchers and clinicians. The components and combinations of therapies used by different professions has not been adequately reported. While the manuscript addresses an important topic, there are some important concerns about the manner in which the information in this study was collected and reported, raising concerns about how biased the findings may be. I have outlined my primary concerns in the recommendations listed below.</p> <ol style="list-style-type: none"><li>1. More information is needed about the processes for data collection. First, how were the participants (who are presumably GPs, PTs and DCs) identified and invited to participate? Also please describe the instructions that were given to the participants about how to report data. Finally, how was the data collected? Did participants complete paper forms? Was a web-based survey instrument used? These factors are important for understanding the potential for selection bias in the findings.</li><li>2. Please provide further information on how patients and providers contributed to the development of the surveys.</li><li>3. Please provide the total number of potential respondents for each provider category (GP, PT and DC). This is important to understand the representativeness of the provider's submitting data.</li><li>4. Table 1 and 2 make it clear there was a good deal of missing data from both providers and patients. It is not clear how missing data were handled in the statistical analysis plan. The amount of missing data needs to be recognized as a limitation in the findings.</li><li>5. Data presented in Figures 4 and 5 that characterize providers</li></ol>
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	<p>appears to limit the providers to those contributing from 5 or more sessions. It appears that this is a relatively small subset of the total number of providers that are included. This process should be described and the characteristics of providers with and without 5 or more sessions should be compared. The conclusions drawn from the data presented in Figures 4 and 5 is from a rather small number of providers raising concerns about the representativeness of this information.</p> <p>6. In the list of strengths and limitations the authors should clarify if each bullet point is considered a strength or weakness.</p>
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<b>REVIEWER</b>	Lewis Kazis Boston University, Department of Health Law, Policy and Management
<b>REVIEW RETURNED</b>	07-Mar-2023

<b>GENERAL COMMENTS</b>	<p>This is a well written article of a complex problem examining variation in the provision of care by different clinician providers for back pain.</p> <p>The article could be strengthened by attention to a few concerns.</p> <ol style="list-style-type: none"> <li>1. the article reports on the approaches to care by chiropractors, PTs and physicians in the care process for those with low back pain. Some comment on the duration of this back pain problem and the severity of the condition would be useful in better understanding the providers approach to care would be useful.</li> <li>2. Does the health insurance have a bearing on the variation one sees in the care process by different provider types?</li> <li>3. More detail is needed on understanding what are the drivers of variation in the approaches to care among the different providers. Can one discuss in more detail what those drivers might be? Does the sociodemographic and clinical characteristics and comorbidities that accompany low back pain play a role in the variation?</li> <li>4. Can the authors describe more specifically future studies to be conducted that are longitudinal in nature that will shed greater light on the drivers of the variation?</li> <li>5. Can the authors give some examples of instrumental variables (clinical and others) not included in this study that would provide greater explanation for the variation in the processes of care reported.</li> <li>6. Given that there is considerable variation in the sample reported why does this provide a rationale for less concern regarding the representativeness of the sample? (Page 13 lines 31-33.)</li> <li>7. In the conclusions, to provide additional work to the done that would give a fuller and more complete picture regarding the outcomes of care given this wide variation one sees within and between different provider types.</li> </ol>
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<b>REVIEWER</b>	Fadi Al Zoubi The Hong Kong Polytechnic University Faculty of Health and Social Sciences, Department of Rehabilitation Sciences
<b>REVIEW RETURNED</b>	23-Apr-2023

<b>GENERAL COMMENTS</b>	<p>I would like to thank the authors for this important contribution to the body of knowledge that this study provides. I do, however, have a few comments that I hope the authors will address.</p> <ol style="list-style-type: none"> <li>1. The authors mentioned using the Audit Prijekt Odense (APO) method. I was denied access to the paper. Therefore, I recommend</li> </ol>
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	<p>that the authors provide a concise explanation.</p> <p>2. In line 15 of page 5, the authors used the abbreviation "incl." which I think it should not be used.</p> <p>3. The authors mentioned that they instructed clinicians to register consecutive visits and fill in the registration chart. However, it is unknown whether these visits were recorded using paper- or electronic-based methods. I believe this is important, particularly if the method was paper-based, as the two data managers may misread or misinterpret certain medical terms or abbreviations. Additionally, the authors should describe the credentials of the data managers.</p> <p>4. As the authors only considered the first 6 sessions of treatment, I think the results are not generalizable, as in some cases the interventions may not be effective, and the clinicians may need to modify or completely change the interventions.</p> <p>5. It is unclear why the authors excluded clinicians with less than 5 registered visits. What if the clinicians' care was effective, why to exclude then?</p> <p>6. I think that table 3 should make it clear that the described characteristics pertain to parents. Please include patient in the table's title.</p>
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**VERSION 1 – AUTHOR RESPONSE**

<p>Reviewer: 1</p> <p>Dr. Julie Fritz, University of Utah</p> <p>Comments to the Author:</p> <p>The purpose of this manuscript is to describe the composition of usual care for patients with LBP provided by general practitioners (GPs), physiotherapists (PTs) and chiropractors (DCs) in Denmark. The study addresses an important topic for both researchers and clinicians. The components and combinations of therapies used by different professions has not been adequately reported. While the manuscript addresses an important topic, there are some important concerns about the manner in which the information in this study was collected and reported, raising concerns about how biased the findings may be. I have outlined my primary concerns in the recommendations listed below.</p>	
<p>Comments from reviewer 1</p>	<p>Response</p>
<p><b>1. More information is needed about the processes for data collection.</b></p> <p><b>First, how were the participants (who are presumably GPs, PTs and DCs) identified and invited to participate?</b></p>	<p>Thank you for bringing this lack of clarity to our attention.</p> <p>All GPs and clinics with PTs and DCs registered under the National Health Insurance in the Region of Southern Denmark received an invitation as individuals (GPs) or as clinics (PTs and DCs) through postal mail.</p> <p><b>Action:</b></p> <p>We have included the following information in the the</p>

**Also please describe the instructions that were given to the participants about how to report data. Finally, how was the data collected? Did participants complete paper forms? Was a web-based survey instrument used?**

methods:

### **“Participants**

*All GPs (936 GPs) and clinics with PTs (103 clinics with 734 PTs) and DCs (69 clinics with approximately 193 DCs) working in primary care and registered under the National Health Insurance in the administrative Region of Southern Denmark, covering approximately 1.2 million inhabitants, were invited through postal mail to participate in a prospective survey registration of consecutive visits with adult patients (age>16) with LBP as their primary complaint.”*

### **Action:**

To clarify the content of the paper chart, we have added a translated version to the manuscript as an supplemental material. Further, we have included information about the procedures in the text:

### **“Survey**

*The participants manually ticked off a 1-page paper registration chart with 45 to 47 variables after every visit (see Supplemental material for version in English). The number of variables varied between professions due to differences in treatment modalities, medication prescription and referral rights. Collected variables included clinician characteristics (profession, sex and years of experience), patient characteristics (age in years, sex, factors associated with poor prognosis and clinical findings) and visit number (defined as the number of visits the patient had had before the current visit in this episode of LBP). Variables relating to poor prognosis and clinical findings were pre-defined, and their presence were indicated by the participant by ticking off the variable on the paper chart. To guide the participants in filling in the chart, they were provided with an overview of easy-to-read definitions of each variable, and the requested minimum and maximum number of possible ticks in each domain.”*

**This factors are important for understanding the potential for selection bias in the findings.**

We agree with the reviewer that there is a potential risk for selection bias in this study. We openly invited all GPs and clinics with PTs and DCs registered under the National Health Insurance, but cannot rule out that the invitation was accepted by, eg, clinicians with a particular interest in the topic. Further, we do not know whether clinicians included all eligible patients during the data collection.

**Action:**

We added the following paragraphs about selection of participants and patients to the discussion:

*“The data collection resulted in a large dataset by the three major professions providing care for patients with LBP in Denmark. All clinicians from the three professions in the Region of Southern Denmark were invited but clinicians were self-selected, and we do not know whether they were representative of the entire clinician populations. Our study found considerable variation in care among the clinicians in our sample, indicating that this variation is likely to be present in a representative sample as well. However, a larger, confirmed representative sample would enable us to further examine and strengthen our estimates of the frequencies and variation of care elements.”*

Selection bias on patients:

*“We used a well-established method with thoroughly tested procedures, including detailed written instructions, for the data collection, with which the GPs were especially familiar, and the quick manual registration chart of care elements in proximity to the patient visit in order to limit recall bias. Whether clinicians included all eligible patients is unknown.”*

2. Please provide further information on how patients and providers contributed to the development of the surveys.

Thank you for the comment. Both clinicians and researchers were involved in the development and revision of the survey. However, patients were not involved.

	<p><b>Action:</b></p> <p>To clarify the role of the clinicians, we have added the number of clinicians who participated in the pilot-testing of the surveys in the methods:</p> <p><i>“Before release, the registration charts were pilot tested by three to five clinicians from each of the three professions resulting in minor revisions.”</i></p> <p>Further, we have added the following elaboration regarding clinician involvement to the “Patient and public involvement” section:</p> <p><b>“Patient and public involvement</b></p> <p><i>To ensure reflection of everyday clinical practice, stakeholder representatives (clinicians and researchers with current or previous clinical experience) from GPs, PTs and DCs participated in a multidisciplinary working group that developed the survey chart. The working group was formed based on expression of interest at an annual meeting under the auspice of the Odense APO-group, where clinicians from the three primary care professions in the Region of Southern Denmark were openly invited to participate. No patients were involved in the project.”</i></p>
<p><b>3. Please provide the total number of potential respondents for each provider category (GP, PT and DC). This is important to understand the representativeness of the provider's submitting data.</b></p>	<p>Thank you for bringing this to our attention. As previously stated, we cannot accurately determine the number of potential respondents but only the number of potential clinics.</p> <p><b>Action:</b></p> <p>We have provided estimates for the number of potential respondents in the methods.</p> <p><b>“Participants</b></p> <p>All GPs (936 GPs) and clinics with PTs (103 clinics with 734 PTs) and DCs (69 clinics with approximately 193 DCs) working in primary care in the administrative Region of Southern Denmark (covering approximately 1.2 million inhabitants) under the</p>

	<p>National Health Insurance) were invited through postal mail to participate in a prospective survey registration of consecutive visits with adult patients (age&gt;16) with LBP as their primary complaint.”</p> <p>We have added the estimated participation rate for each profession in the results:</p> <p><b>“RESULTS</b></p> <p><b><i>Clinician characteristics</i></b></p> <p><i>A total of 143 clinicians (33 GPs, 67 PTs and 43 DCs with a 4%, 9% and 22% participation rate, respectively) collected data from 4,791 LBP visits.”</i></p> <p>We added the following paragraph about selection of participants to the discussion:</p> <p><i>“The data collection resulted in a large dataset by the three major professions providing care for patients with LBP in Denmark. All clinicians from the three professions in the Region of Southern Denmark were invited but clinicians were self-selected and we do not know whether they were representative of the entire clinician populations. Our study found considerable variation in care among the clinicians in our sample, indicating that this variation is likely to be present in a representative sample as well. However, a larger and confirmed representative sample would enable us to further examine and strengthen our estimates of the frequencies and variation of care elements.”</i></p>
<p><b>4. Tables 1 and 2 make it clear that there was a good deal of missing data from both providers and patients. It is not clear how missing data were handled in the statistical analysis plan. The amount of missing data needs to be recognized as a limitation in the findings.</b></p>	<p>Thank you for pointing this out. We realize our phrasing of the results in the text and tables may indicate a large subset of missing data, but we would like to clarify.</p> <p>We chose to focus on recently initiated courses of treatment and, therefore, included only the first to sixth visits, excluding 1,280 visits recorded as 7<sup>th</sup> visit or later in the treatment course.</p> <p>The cut point at the first six visits aligns with the</p>

national mean number of visits to Danish chiropractors, which is 6 visits (1). In this respect, we consider physiotherapy practice as comparable to chiropractic practice. This partially informed the decision of a cut point at 6<sup>th</sup> visit, but we do acknowledge that the cut point is to some extent arbitrary.

**Action:**

To clarify, we have revised several sections.

“The overall aim of this study was to explore the composition of care provided by GPs, PTs and DCs to patients with LBP. As the composition of care may vary over a treatment course, we focused on a rather well-defined part of the course, namely the initiation and early implementation. Specifically, we pursued the following: [...]”

Statistical analysis-section:

“To investigate recently initiated treatment courses, we included only data from the first to the sixth visits. This cut point also aligned with the national mean number of visits to Danish chiropractors, which is six visits (1). In addition, we partially investigated the care elements in relation to the visit number in order to check whether this period was sufficiently homogeneous. The denominator of this study was patient visits. As visits were registered consecutively without patient identifiers, patients may have been registered more than once. Visits with missing information about the provided care elements were excluded. No imputation was performed.”

*“At the professional level, visit number distribution and the number of single elements of care per total number of visits were reported as counts and percentages. The frequency of single elements of care by visit number and the distribution of the frequency of the four shared care elements across clinicians were illustrated graphically.*

*With respect to the variation across the*



	<p><i>individual clinicians, we generated a variety of figures depicting certain aspects of the use of care elements for each clinician. Clinicians with very few visits would disturb the visual impression about the variation, as the distribution of care elements within such clinicians would mainly reflect random noise. Hence, clinicians with less than five visits were excluded from individual clinician-level analyses.”</i></p> <p>We have also revised the first paragraph of the results to:</p> <p><i>A total of 143 clinicians (33 GPs, 67 PTs and 43 DCs with a 4%, 9% and 22% participation rate, respectively) collected data from 4,791 LBP visits. After excluding 1,280 visits beyond the 6<sup>th</sup> visit and 11 visits with missing data on the care elements provided, GPs collected information from n=220 visits, PTs from n=1,068 visits and DCs from n=2,212 visits . Ultimately, data on 3,500 visits from recently initiated treatment courses were analysed.</i></p> <p>Further, we have stated the amount of clinicians and visits excluded from the individual clinician-level analyses in the results:</p> <p><b><i>“Frequency of care elements at the clinician level</i></b></p> <p><i>Due to having registered less than five visits, 8 GPs (24% of GPs) with 22 visits (10% of GP visits) and 7 PTs (10% of PTs) with 19 visits (2% of PT visits) were excluded from individual clinician-level analyses. The excluded clinicians were comparable to the included with respect to age, sex, experience and provided care elements (data not shown).“</i></p>
<p><b>5. Data presented in Figures 4 and 5 that characterize providers appears to limit the providers to those contributing from 5 or more sessions. It appears that this is a relatively small subset of the total number of providers that are included. This process should be described and the characteristics of providers with and</b></p>	<p>Thank you for this observation.</p> <p>In the previous comment, we have elaborated on the reasoning for excluding clinicians with few registrations and added the arguments to the</p>

<p>without 5 or more sessions should be compared.</p> <p>The conclusions drawn from the data presented in Figures 4 and 5 is from a rather small number of providers raising concerns about the representativeness of this information.</p>	<p>statistical analysis and results sections.</p> <p>As stated above, we excluded 8 (24%) GPs with a total of 22 visits (10% of all GP visits) and 7 (10%) PTs with a total of 19 visits (1.8% of all PT visits).</p> <p>When compared, we observe no difference in the characteristics between included and excluded clinicians.</p> <p><b>Action:</b></p> <p>To clarify the total amount of clinicians and visits that were excluded for the purpose of clinician level analyses and the similarity with the included clinicians, we have added the following to the results section:</p> <p><b><i>“Frequency of care elements at the clinician level</i></b></p> <p><i>Due to having registered less than five visits, 8 GPs (24% of GPs) with 22 visits (10% of GP visits) and 7 PTs (10% of PTs) with 19 visits (2% of PT visits) were excluded from individual clinician-level analyses. The excluded clinicians were comparable to the included with respect to age, sex, experience and provided care elements (data not shown)“</i></p>
<p>6. In the list of strengths and limitations the authors should clarify if each bullet point is considered a strength or weakness.</p>	<p>Thank you for this suggestion. We have clarified our interpretation of what is considered strengths and weaknesses.</p> <p><b>Action:</b></p> <p>Each bullet is labelled accordingly, and the last bullet is made into two separate bullets as it includes both a strength and a weakness.</p> <p><i>“One strength of the study is the unique multi-disciplinary data collection involving general practitioners, physiotherapists and chiropractors that</i></p>

	<p><i>provide care for most patients with LBP in Denmark, allowing comparisons within and between the professions.”</i></p> <p><i>“Risk of information bias when filling in the registration charts due to variation in individuals’</i></p> <p><i>understanding of and thresholds for when a given care element has been provided is considered a weakness.”</i></p> <p><i>“Including the visit number of the recorded visits in the treatment courses is a strength which provided new quasi-longitudinal insight into LBP management in primary care”</i></p> <p><i>“A limitation of the current approach is that actual longitudinal data of treatment courses for individual patients are required in order to conclude if or how care is individualised and composed over time.”</i></p>
<p><b>Reviewer: 2</b></p> <p><b>Dr. Lewis Kazis, Boston University</b></p> <p><b>Comments to the Author:</b></p> <p><b>This is a well written article of a complex problem examining variation in the provision of care by different clinician providers for back pain.</b></p> <p><b>The article could be strengthened by attention to a few concerns.</b></p>	
<p><b>1. the article reports on the approaches to care by chiropractors, PTs and physicians in the care process for those with low back pain. Some comment on the duration of this back pain problem and the severity of the condition would be useful in better understanding the providers approach to care would be useful.</b></p>	<p>Thank you for the comment. We agree the duration and severity of the back pain may be useful for understanding the care provided.</p> <p><b>Action</b></p> <p>We have added information about duration of back pain, functional limitation and emotional distress to table 2 (Patient characteristics at visits).</p> <p>To avoid dual reporting of the results, we are hesitant to add further information as these have been reported in a previous publication (2). If deemed necessary by the reviewer or editor, we are, of</p>

	course, happy to comply.
<p><b>2. Does the health insurance have a bearing on the variation one sees in the care process by different provider types?</b></p>	<p>Thank you for this relevant thought.</p> <p>We have previously shown that the demographic and clinical characteristics of patients with low back pain differ considerably across the three clinical groups (2). The Danish healthcare system is tax-funded and provides care from GPs free of charge but only partial reimbursement for PT and DC care, as described under ‘Settings’. It is possible that the out-of-pocket expense for PT and DC care may explain some of the variation for visits paid by insurance vs out-of-pocket.</p> <p>Unfortunately, we did not collect data on health insurance matters, and therefore, we can only speculate on how private health insurance would impact the care provided. Further studies examining how health insurance affects the care provided is relevant.</p> <p><b>Action:</b></p> <p>We have added the following to the discussion:</p> <p><i>“Further, investigations of private health insurances and other financial incentives, health care cultures, and individual factors in both patients and clinicians (e.g. personal beliefs and preferences), may contribute to a fuller understanding of the complex interplay of system, setting, provider and patient-level factors that may influence care delivery (3,4).</i></p>
<p><b>3. More detail is needed on understanding what are the drivers of variation in the approaches to care among the different providers. Can one discuss in more detail what those drivers might be? Does the sociodemographic and clinical characteristics and comorbidities that accompany low back pain play a role in the variation?</b></p>	<p>Thank you for bringing up this important observation.</p> <p>The present study focus on clinicians, and therefore, we feel it would be speculative to discuss in more detail patient-level or other drivers without data to support our arguments.</p> <p>However, the comment has given us confidence in pursuing the planning of a second exploratory study, which will report on patient-level drivers and whether patient characteristics may explain the variation of care, where the idea is presented briefly in the added</p>

	text in the comment above and below.
<b>4. Can the authors describe more specifically future studies to be conducted that are longitudinal in nature that will shed greater light on the drivers of the variation?</b>	<p>Thank you for making us reflect further on this point.</p> <p><b>Action:</b></p> <p>We have added more reflections in the discussion:</p> <p><i>“Full quantification and understanding of variation in care across clinicians and the degree to which care is modified for individual patients would require access to individual patients’ longitudinal data over complete treatment courses, allowing for reconstructing of the chosen care strategy for each patient. Further, adopting a whole-system perspective and multi-level data collection would allow for a more nuanced analysis of this complex and dynamic phenomenon”</i></p>
<b>5. Can the authors give some examples of instrumental variables (clinical and others) not included in this study that would provide greater explanation for the variation in the processes of care reported.</b>	<p>Again, thank you for stimulating the discussion of relevant factors to study in further research.</p> <p><b>Action:</b></p> <p>In reply to comments 2 and 4, we have exemplified instrumental variables in the discussion section.</p>
<b>6. Given that there is considerable variation in the sample reported why does this provide a rationale for less concern regarding the representativeness of the sample? (Page 13 lines 31-33.)</b>	<p>This argument is based on the rationale that if there is large variation in a subset of the whole population, the extremes of the variation would also be present in a representative sample. Therefore, we find it reasonable to assume that the variation exists, but the certainty of the estimates would be improved by a larger and confirmed representative sample.</p> <p><b>Action:</b></p> <p>We have revised the text in the discussion to:</p> <p><i>“The data collection resulted in a large dataset by the three major professions providing care for patients with LBP in Denmark. All clinicians from the three professions in the Region of Southern Denmark were invited but clinicians were self-selected and we do not know whether they were representative of the entire clinician populations. Our study found considerable variation in care among the clinicians in our sample,</i></p>

	<p><i>indicating that this variation is likely to be present in a representative sample as well. However, a larger and confirmed representative sample would enable us to further examine and strengthen our estimates of the frequencies and variation of care elements."</i></p>
<p><b>7. In the conclusions, to provide additional work to the done that would give a fuller and more complete picture regarding the outcomes of care given this wide variation one sees within and between different provider types.</b></p>	<p>We hope that by adding information about what is needed in terms of future research in the discussion section, we have addressed the reviewer's comment to their satisfaction.</p>
<p><b>Reviewer: 3</b></p> <p><b>Dr. Fadi Al Zoubi, The Hong Kong Polytechnic University Faculty of Health and Social Sciences</b></p> <p><b>Comments to the Author:</b></p> <p><b>I would like to thank the authors for this important contribution to the body of knowledge that this study provides. I do, however, have a few comments that I hope the authors will address.</b></p>	
<p><b>1. The authors mentioned using the Audit Prijekt Odense (APO) method. I was denied access to the paper. Therefore, I recommend that the authors provide a concise explanation.</b></p>	<p>Thank you for this comment. We agree that the methods should be transparent and accessible to all.</p> <p><b>Action:</b></p> <p>We have added a translated example of the registration chart as supplemental material, which should supplement the methods section, and added the following to the text:</p> <p><i>"We followed the procedures of Audit Projekt Odense (APO) (18), which have previously been shown to be a viable method for extensive data collections in primary care. In brief, participating clinicians were asked to register all visits regarding LBP on paper charts in anonymised format, including data on patient and management characteristics."</i></p>
<p><b>2. In line 15 of page 5, the authors used the abbreviation "incl." which I think it should not be used.</b></p>	<p>Thank you for pointing this out.</p>

	<p><b>Action:</b></p> <p>We have changed the wording from “incl.” to “including” throughout the manuscript.</p>
<p><b>3. The authors mentioned that they instructed clinicians to register consecutive visits and fill in the registration chart. However, it is unknown whether these visits were recorded using paper- or electronic-based methods.</b></p> <p><b>I believe this is important, particularly if the method was paper-based, as the two data managers may misread or misinterpret certain medical terms or abbreviations. Additionally, the authors should describe the credentials of the data managers.</b></p>	<p>Thank you for bringing this forward.</p> <p>The participants were provided with paper registration charts and definitions of the variables and were instructed to manually fill in the registration charts during or immediately after the visit.</p> <p><b>Action:</b></p> <p>To clarify the content of the paper chart, we have added a translated version to the manuscript as an supplemental material. Further, we have included information about the procedures in the text, and the role of the data managers including relevant pitfalls for data transfer:</p> <p><b>“Survey</b></p> <p><i>The participants manually ticked off a 1-page paper registration chart with 45 to 47 variables after every visit (see Supplemental material for version in English). The number of variables varied between professions due to differences in treatment modalities, medication prescription and referral rights. Collected variables included clinician characteristics (profession, sex and years of experience), patient characteristics (age in years, sex, factors associated with poor prognosis and clinical findings) and visit number (defined as the number of visits the patient had had in the current episode of LBP). Variables relating to poor prognosis and clinical findings were pre-defined, and their presence were indicated by the participant ticking off the variable on the paper chart. To guide the participants in filling in the chart, they were provided with an overview of easy-to-read definitions of each variable, and the minimum and maximum number of possible ticks.“</i></p> <p><i>“After the data collection, data (check marks and</i></p>

	<p><i>numbers) were entered manually in a Pascal program independently by two data managers (research assistants with extensive familiarity and experience in the method) and checked for consistency by a third member from the research team.”</i></p>
<p><b>4. As the authors only considered the first 6 sessions of treatment, I think the results are not generalizable, as in some cases the interventions may not be effective, and the clinicians may need to modify or completely change the interventions.</b></p>	<p>Thank you for the comment.</p> <p>We chose to focus on recently initiated courses of treatment and, therefore, included only the first to sixth visits, excluding 1,280 visits recorded as 7<sup>th</sup> visit or later in the treatment course.</p> <p>The cut point at the first six visits aligns with the national mean number of visits to Danish chiropractors, which is 6 visits (1). In this respect, we consider physiotherapy practice as comparable to chiropractic practice. This partially informed the decision of a cut point at 6<sup>th</sup> visit, but we do acknowledge that the cut point is to some extent arbitrary.</p> <p>We agree that the results are not generalisable to the full treatment course. As we have discussed in the article, a full quantification of the complete treatment courses from initial visit to discharge would (among other things) be required for generalisability. However, we consider the study to be exploratory for informing subsequent study hypotheses rather than generalisability. As we limited the scope of the investigation to recently initiated treatment courses, we do not believe that the exclusion of visits recorded as 7<sup>th</sup> or later will affect the generalisability for recently initiated treatment courses, but rather for the reasons described above.</p> <p><b>Action:</b></p> <p>To emphasise the scope of the study, we have revised several sections.</p> <p>Firsly, the aim of the study:</p> <p>“The overall aim of this study was to explore the</p>



	<p>composition of care provided by GPs, PTs and DCs to patients with LBP. As the composition of care may vary over a treatment course, we focused on a rather well-defined part of the course, namely the initiation and early implementation. Specifically, we pursued the following: [...]“</p> <p>The statistical analysis section:</p> <p>“To investigate recently initiated treatment courses, we included only data from the first to the sixth visits. This cut point also aligned with the national mean number of visits to Danish chiropractors, which is six visits (1). In addition, we partially investigated the care elements in relation to the visit number in order to check whether this period was sufficiently homogeneous. The denominator of this study was patient visits. As visits were registered consecutively without patient identifiers, patients may have been registered more than once. Visits with missing information about the provided care elements were excluded. No imputation was performed.</p> <p>Further, we emphasized in the summary of findings that the study pertains to recently initiated treatment courses.</p> <p><b>“Discussion</b></p> <p><i>Based on 3,500 LBP visits, this study explored the composition of care elements provided to patients with LBP by GPs, PTs and DCs in recently initiated treatment courses.”</i></p>
<p><b>5. It is unclear why the authors excluded clinicians with less than 5 registered visits. What if the clinicians’ care was effective, why to exclude then?</b></p>	<p>Thank you for this observation. We would like to clarify this.</p> <p>As stated above, we excluded 8 (24%) GPs with a total of 22 visits (10% of all GP visits) and 7 (10%) PTs with a total of 19 visits (1.8% of all PT visits).</p> <p>When compared, we observe no difference in the characteristics between included and excluded</p>

clinicians.

**Action:**

To clarify the reasoning and the total amount of clinicians and visits that were excluded for the purpose of clinician level analyses and the similarity with the included clinicians, we have revised several sections:

Statistical analysis-section:

*“At the professional level, visit number distribution and the number of single elements of care per total number of visits were reported as counts and percentages. The frequency of single elements of care by visit number and the distribution of the frequency of the four shared care elements across clinicians were illustrated graphically.*

*With respect to the variation across the individual clinicians, we generated a variety of figures depicting certain aspects of the use of care elements for each clinician. Clinicians with very few visits would disturb the visual impression about the variation, as the distribution of care elements within such clinicians would mainly reflect random noise. Hence, clinicians with less than five visits were excluded from individual clinician-level analyses.”*

***“Frequency of care elements at the clinician level***

*Due to having registered less than five visits, 8 GPs (24% of GPs) with 22 visits (10% of GP visits) and 7 PTs (10% of PTs) with 19 visits (2% of PT visits) were excluded from individual clinician-level analyses. The excluded clinicians were comparable to the included with respect to age, sex, experience and provided care elements (data not shown)“*

<p><b>6. I think that table 3 should make it clear that the described characteristics pertain to parents. Please include patient in the table's title.</b></p>	<p>That is a very good observation, and it will certainly add to the clarity.</p> <p><b>Action:</b></p> <p>The table title has been changed to: "Patient characteristics at visits"</p>
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**VERSION 2 – REVIEW**

<b>REVIEWER</b>	Julie Fritz University of Utah, Physical Therapy and Athletic Training
<b>REVIEW RETURNED</b>	26-Jun-2023

<b>GENERAL COMMENTS</b>	<p>The revised manuscript is much improved and has addressed many of the concerns from the prior review. I have a few additional comments.</p> <p>In the methods section, in the survey question, recommend moving the new sentence that reads "In brief, participating clinicians were asked to register all visits regarding LBP on paper charts in anonymized format, including data on patient and management characteristics." to the beginning of the paragraph instead of having it at the end of the paragraph.</p> <p>In the statistical analysis section, please clarify the removal of providers with less than 5 visits - does this mean that providers who had less than 5 patients for whom data were collection, or providers with fewer than 5 total visits contributed regardless of the number of unique patients?</p> <p>In the discussion section, limitations section - Bias related to clinician self-selection is acknowledged. There should be further acknowledgement of the very low percentage of providers contributing data, raising further concerns about generalizability. This should be further noted in the key points for the study.</p>
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**VERSION 2 – AUTHOR RESPONSE**

Comments from reviewer 1	Response
<p>In the methods section, in the survey question, recommend moving the new sentence that reads "In brief, participating clinicians were asked to register all visits regarding LBP on paper charts in anonymized format, including data on patient and management characteristics." to the beginning of the paragraph instead of having it at the end of the paragraph.</p>	<p>Thank you for the suggestion to improve the paragraph. We have moved the sentence as suggested. The beginning of the paragraph now reads:</p> <p><i>In brief, participating clinicians were asked to register all visits regarding LBP on paper charts in anonymised format, including data on patient and management characteristics. The participants manually ticked off a 1-page paper registration chart</i></p>

	<p><i>with 45 to 47 variables after every visit (see online supplementary file 1 for an English version of the GP registration chart)). [...]</i></p>
<p>In the statistical analysis section, please clarify the removal of providers with less than 5 visits - does this mean that providers who had less than 5 patients for whom data were collection, or providers with fewer than 5 total visits contributed regardless of the number of unique patients?</p>	<p>Thank you for the comment.</p> <p>We agree with the reviewer that this distinction is relevant. However, we have no information about the number of patients in each provider, as explained in the the first paragraph of the statistical analysis section:</p> <p><i>"The denominator of this study was patient visits. As visits were registered consecutively without identifiers, patients may have been registered several times in the data collection."</i></p> <p>To avoid further confusion about this point, we have not changed the phrasing.</p>
<p>In the discussion section, limitations section - Bias related to clinician self-selection is acknowledged. There should be further acknowledgement of the very low percentage of providers contributing data, raising further concerns about generalizability. This should be further noted in the key points for the study.</p>	<p>Thanks you, and we acknowledge this point and have added the following to key points and discussion:</p> <p>Key point #5:</p> <p><i>"The low participation rate of clinicians should warrant caution in generalising the study findings. It has to be expected that the participating clinicians have a specific interest in the topic of the choice of care."</i></p> <p>Added to the discussion:</p> <p><i>"With the observed considerable variation of care provided, we believe this issue is of limited consequence to our results. However, it has to be expected that the clinicians have a particular interest in the topic which, combined with a relatively low participation rate, calls for caution in generalising the study findings."</i></p>