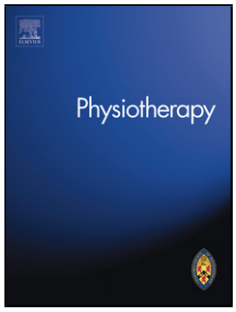

Title: Exercise prescription for patients with non-specific chronic low back pain: a qualitative exploration of decision making in physiotherapy practice

Author: Rob Stenner Annette Swinkels Theresa Mitchell Shea Palmer

PII: S0031-9406(15)03786-4
DOI: http://dx.doi.org/doi:10.1016/j.physio.2015.05.004
Reference: PHYST 836

To appear in: *Physiotherapy*

Received date: 25-7-2014
Accepted date: 24-5-2015

Please cite this article as: Stenner R, Swinkels A, Mitchell T, Palmer S, Exercise prescription for patients with non-specific chronic low back pain**:** a qualitative exploration of decision making in physiotherapy practice., *Physiotherapy* (2015), http://dx.doi.org/10.1016/j.physio.2015.05.004

TITLE PAGE

Title

Exercise prescription for patients with non-specific chronic low back pain**:** a qualitative exploration of decision making in physiotherapy practice.

Author names and affiliations

Rob Stenner[a], Annette Swinkels[b] , Theresa Mitchell[b], Shea Palmer[b]

[a]Orthopaedic Assessment Service, Somerset Partnership NHS Foundation Trust, 48 Parkfield Drive, Taunton, Somerset, UK, TA1 5BU

[b]Faculty of Health & Applied Sciences, University of the West of England, Glenside Campus, Blackberry Hill, Bristol, UK, BS16 1DD

E-mail addresses

robert.stenner@sompar.nhs.uk

swinkelsannette@gmail.com

theresa.mitchell@uwe.ac.uk

shea.palmer@uwe.ac.uk

21

22 **Corresponding author**

23 Dr Rob Stenner, Consultant Physiotherapist, Orthopaedic Assessment Service,

24 Somerset Partnership NHS Foundation Trust, 48 Parkfield Drive, Taunton, Somerset,

25 UK, TA1 5BU

26 Tel +44 (0)1823 331710, Fax +44 (0)1823 253148

27

28 **Word count.** 3 626

29
30

Title: Exercise prescription for patients with non-specific chronic low back pain: A qualitative exploration of decision making in physiotherapy practice

Abstract

Title: **Exercise prescription for patients with non-specific chronic low back pain: a qualitative exploration of decision making in physiotherapy practice.**

Background: Providing an effective exercise prescription process for patients with non-specific chronic low back pain (NSCLBP) is a challenging task. Emerging research has indicated that partnership in care and shared decision making are important for people with NSCLBP and calls for further investigation into the approaches used to prescribe exercise.

Objective: To explore how shared decision making and patient partnership are addressed by physiotherapists in the process of exercise prescription for patients with NSCLBP.

Design: A qualitative study using a philosophical hermeneutic approach.

Methods: Eight physiotherapists were each observed on three occasions undertaking their usual clinical activities (total n=24 observations). They conducted brief interviews after each observation and a later in depth semi-structured interview. Iterative hermeneutic strategies were used to interpret the texts and identify the characteristics and processes of exercise prescription for patients with NSCLBP.

Findings: The findings revealed how physiotherapy practice often resulted in unequal possibilities for patient participation which were in turn linked to the physiotherapists' assumptions about the patients, clinical orientation, cognitive and decision making processes. Three linked themes emerged: (1) I want them to exercise, (2) Which exercise? - the tension between evidence and everyday practice and (3) Compliance-orientated more than concordance based.

Conclusions: This research, by focusing on a patient-centred approach, makes an important contribution to the body of evidence relating to the management of NSCLBP. It challenges physiotherapists to critically appraise their approaches to the prescription of exercise therapy in order to improve outcomes for these patients.

Abstract word count 244

Manuscript word count 3 626

Key Words:

Exercise
Back pain
Decision making
Patient-centred care

Introduction:

Within healthcare, there is a growing interest in enhancing patient participation in decisions regarding their care [1]. Shared decision making focuses on patients and clinicians clarifying treatment options and agreeing a preferred management approach. Patients are viewed as experts on their own health, values and lifestyle and clinicians as experts about treatment options, potential limitations and benefits [2]. The potential benefits of shared decision making are most significant in situations of uncertainty, such as the optimal type of exercise for non-specific chronic low back pain (NSCLBP) [3, 4] or where two or more clinically reasonable alternatives or 'equipoise' exists [5].

NSCLBP is a common condition managed by physiotherapists, where exercise is consistently recommended in treatment guidelines [6]. 'Exercise prescription' is a term that is often used in the literature [7] and, in physiotherapy practice, exercise programmes can vary in content and method of delivery [8]. For the purposes of this study exercise prescription was defined as:

"A specific plan of fitness or health-related activities that is designed for a specified purpose, which is often developed by a fitness or healthcare specialist for and in collaboration with the patient." [9 p.1]

There have been calls for further research into exercise prescription, taking into account issues such as decision making [3, 10] to strategically direct and maximise the evidence base for musculoskeletal physiotherapy [11].

This report is part of a larger programme of research which explored the process of exercise prescription, taking into account issues such as decision making and how this accords with patient preferences and experiences. Physiotherapists' and patients' perspectives have been reported separately to allow full exploration of the data in relation to the relevant literature. This first report focuses on the physiotherapists' perspectives.

Method:

This study was guided by the philosophical hermeneutic approach of Gadamer, a branch of interpretive phenomenology which seeks to understand participants' experiences through the interpretation of text [12]. In this study text was in the form of observation field notes and transcribed interviews (informal field and semi-structured). Philosophical hermeneutics does not provide a method for interpretation, but offers a number of key constructs such as the 'hermeneutic circle', 'fusion of horizons' and pre-understandings or 'prejudices' of the phenomenon of interest [13]. Gadamer declared that researchers cannot free themselves of what they know or think and prejudices are seen as a valuable guide to inquiry as understanding only emerges because the researcher has brought some assumptions to the text [14].

Identification of their pre-understandings of the topic enhances transparency and also helps researchers to examine their prejudices and the degree to which these influence subsequent interpretation. In this study the first author, an experienced spinal physiotherapist, was able to challenge his own experience and prejudices about the dominant role of physiotherapists in structuring interactions and making

decisions. A reflective journal was kept throughout the research to track emerging interpretations and ensure 'hermeneutic alertness', where the researcher steps back to reflect on the meanings of situations rather than accepting their pre-understandings and interpretations at face value [15].

Sample and data collection:

Potential participant physiotherapists were approached initially by e-mail contact by the researcher. A stratified purposive sampling approach based on location, clinical seniority and time since qualification recruited eight physiotherapists over an eight month period working in one musculoskeletal physiotherapy service delivered across seven departments in South West England. Physiotherapists encompassed a range of clinical experience (2–19 years) and all were regularly engaged in the management of patients with NSCLBP. All physiotherapists approached agreed to participate and gave informed written consent.

Each physiotherapist was observed assessing and treating three new patients on separate occasions, with an informal field interview immediately following each observation and a final in-depth semi-structured interview after the observation period (Fig. 1).

Insert Figure 1 – here

All observations and interviews were conducted by the first author. By using both observations and interviews the aim was to gather information as close to the clinical experience as possible. Observations provided prompts for the later interviews to

154 explore in depth how the physiotherapists gave meaning to and interpreted their
155 clinical practice.
156
157 Patients who had been referred with a stated diagnosis of LBP were given an
158 appointment with a physiotherapist and were approached by the researcher prior to
159 commencement of the assessment. NSCLBP for the purposes of this study was
160 defined as pain persisting for six weeks or more. Six weeks was chosen as it has
161 been considered by some to be beyond the period of spontaneous recovery for most
162 LBP [16]. Patients were given a participant information sheet and offered the
163 opportunity to ask any questions prior to seeking their written consent to observe
164 their initial assessment and treatment. No patients refused to participate. Each
165 observation lasted between 40 and 60 minutes, and was treated as a unique event
166 with no predetermined categories or notions as to what might be observed to allow
167 for a more open minded and context sensitive approach.
168
169 Semi-structured interviews were undertaken with each physiotherapist within two
170 weeks of completing the observations. A series of broad topic headings was
171 developed for the interview guide, fostering flexibility in exploring physiotherapists'
172 clinical practice, decision making processes and experiences. The topic guide was
173 continually adapted on the basis of findings from the observations and informal field
174 interviews (please see the final version in the supplemental information).
175
176 All interviews were digitally recorded and transcribed verbatim by the first author to
177 maximise familiarity with the data. Each participant's text set was anonymised. From

this intensive engagement, hermeneutic texts were constructed which consisted of 24 observation field notes, 24 informal interviews and 8 semi-structured interviews.

Data analysis:

Interpretation of the texts was undertaken by the first author (RS) based on a thematic analysis [17] guided by the principles of Gadamerian hermeneutics [12, 13] (Table 1).

Insert Table 1 – here

No independent analysis of the data was undertaken based on the basic tenets of philosophical hermeneutics whereby a dialogue takes place between the researcher and text. Therefore different researchers bring to the analysis their own pre-understandings with respect to past experiences, and so consensus is not expected or required using this approach. The prior clinical experience of the first author (RS) is likely to influence the interpretive perspectives and ways of constructing meaning, but Gadamer considered this necessary for full understanding [12]. However, to ensure dependability, a second author (TM) facilitated refinement of the thematic analysis through peer review and auditing [18]. Participant quotes beginning with an O are taken from the observations or informal field interviews, all other quotes are taken from the semi-structured interviews.

Findings:

Three main themes directly relevant to how decisions are reached in the process of exercise prescription were formed from the texts (Table 2). The findings provide a complex understanding of how physiotherapists regard and apply exercise based management strategies to patients with NSCLBP, often resulting in unequal possibilities for patient participation.

Insert Table 2 – here

Theme 1: I want them to exercise

This theme considers the way physiotherapists reached treatment or management decisions. The majority of physiotherapists used a process of decision making that was based on either their personal preference for, or experience of, different interventions rather than arrived at by mutual agreement. The following emerged as sub themes.

Defining the options available: an important context for shared decision making involves the clinician providing information to the patient on the management options in an unbiased way [5]. In this study there was little evidence of the patients being offered a choice of different management options, as exercise was regarded as the 'default' treatment approach:

> *"I have to say I don't particularly ask the patient what they want. I think giving them so much choice, they can often get confused, it is almost too much for them." (T5.40)*

> "*I must admit for every low back pain I have coming in through my door I pretty much will always give them exercise. So I must admit I don't think about it too hard, it would be the first thing I would choose to do rather than do something else first*." *(T1.31-33)*

I try and get people to think about it from my point of view: Physiotherapists listened attentively to the patients' stories which often included information and cues about their experiences with exercise interventions as part of treatment previously received. However this was rarely reflected in the decision making which was ostensibly driven by clinician's preference rather than those of patients:

> *"I try and get people to think about, from my point of view I want them to exercise so that they actually get used to getting their spine moving again." (T1.18)*

This was revealed in the observation of one patient who talked about regularly consulting and benefiting from treatment by a manual therapist. The patient's response to the physiotherapist's suggestion that exercise would be one of the best ways to manage the problem was:

> *"I've tried exercise religiously in the past, it made no difference, it was ridiculous." (OT1 (17).14)*

Despite the patient expressing clear doubts the physiotherapist continued to prescribe an individual exercise programme contrary to the patient's preferences:

> *"He had tried exercises in the past from a previous physio that he didn't find helpful even though he said he had tried them religiously. So it is difficult to know how compliant he will be. I think he was willing to try them again." (OT1 (17).20-21)*

Checking patient understanding and ability to implement the plan: to effectively participate in decision making, patients should have some understanding of their problem and the benefits and limitations associated with treatment options [5]. Physiotherapists frequently questioned whether their explanations had gone far enough, such that on occasions they questioned whether patients would actually return for review:

> *"I'd like to think she has taken on board everything I've said, and that therefore she had a fairly good understanding. I have misgivings however; I'd be interested to find out whether she has done any of it or in fact comes back." (OT6 (7).22)*

The physiotherapists' approach to implementation of an exercise programme suggested a tendency to provide perceived beneficial treatments over informed patient choices based on a process of implied consent:

> *"A good proportion of the time I will say 'look this is what I think is up, this is what I think will help you, what do you think, do you agree and are you happy to do that?'" (T4.49-51)*

From these comments it could be concluded that very little shared decision making is likely.

Theme 2: Which exercise? - the tension between evidence and everyday practice

This theme can be broken down into a range of sub themes which encapsulate the struggle to balance competing priorities of research evidence, patients' preferences, as well as the physiotherapist's own attributions and perceived professional role when deciding on the type of exercise to be prescribed.

Interpreting the evidence: physiotherapists' interpretation of the evidence led to a widely held belief that engaging patients with NSCLBP in some form of general exercise, and not particular types of exercise, was the most important factor:

296 *"Evidence tends to imply that any form of exercise is going to be helpful in the*
297 *long run, it's just about getting out there and doing it." (T1.48)*
298
299 *Exercise needs to be fun:* physiotherapists talked about the need for patients to
300 'enjoy' exercise to want to engage in and continue doing it, potentially taking into
301 account the influence of patients' values and perspectives on exercise, and on
302 factors that could empower patients to take control by generating their own ideas on
303 exercise:
304
305 *"I guess some patients come in with specific ideas or they are already*
306 *attending yoga or pilates, and I think it is worth taking on board what they*
307 *bring in with them rather than what you think…." (T4.63)*
308
309 *It depends on what I find*: in contrast to the previous two sub themes, seven
310 physiotherapists stated that the objective assessment in terms of finding positive and
311 negative evidence towards specific postural, structural or biomechanical problems
312 predominated in determining the exercise prescribed:
313
314 *"Overall once I've decided to include it, the objective assessment plays a very*
315 *large role in the choice of specific exercises. I will tend to work out what I think*
316 *is best." (T4.35)*
317
318 In spite of the frequently reported use of a specific exercise programme, several
319 physiotherapists also questioned the merits of such an approach, feeling that

patients would be less likely to engage with an exercise programme perceived as 'boring' and possibly not offering immediate tangible benefits:

> *"I think a specific exercise programme of what are often particularly boring exercises, a patient is likely to do them in the short term I suspect, but only if they see some improvement in their pain."(T6.56-57)*

Physiotherapists also talked about the tendency to '*want to give the patient something'*. This may reflect a situation that serves the physiotherapist's needs more than the patient's, fulfilling a perception of *'what I should do'* as a physiotherapist:

> *"I think the pressure comes from lots of different angles, it probably comes from myself, in that I want to give them something to take away from the session, if only it's an exercise or two I feel I should give the patient something." (T6.86)*

One physiotherapist offered a unique and insightful perspective in believing a philosophical shift is needed as to how physiotherapists think about their role:

> *"On a philosophical level perhaps we should not think of ourselves as therapists but more of a health counsellor, and not sitting with our therapist hat on 'I am going to give you therapy, because I am a physiotherapist'."* (T7.94)

Theme 3: Compliance-orientated more than concordance based

In this theme physiotherapists talked about the most likely influences impacting on a patient's ability to engage with an exercise programme. By eliciting this information it could be argued that the physiotherapists were adopting a patient-centred approach in terms of understanding the patients in terms of their unique individuality. However their approach could be interpreted as a form of 'bargaining' or trying to obtain compliance to their suggestions and expert recommendations, rather than a concordant approach in which power, responsibility and control over decision making is equally shared.

Pinpointing the barriers: the physiotherapists felt that the social circumstances and busy lifestyles of the patients suggested they have little time available to exercise. Negotiation then involved determining how exercise can be incorporated into the patient's lifestyle.

> *"I often give them a programme that only consists of 3 exercises that only take 3 to 4 minutes to do 2 to 3 times a day. I say 'do you have enough time to make a cup of tea or brush your teeth' and they'll go 'yes' , and I say 'this is just exactly the same it is something you have got to slot in, that will be part of your lifestyle now and for the foreseeable future." (T5.47-48)*

Worsening pain during exercise is regarded as a potential barrier to patients undertaking an exercise programme [19]. Yet, in spite of offering messages aimed at reducing patients' fear or anxiety about pain, what was apparent from this study were

the physiotherapists' own reported concerns of increasing pain by using an exercise based intervention [20]:

> *"I try and talk to them about how pain is very normal; pain is not a reason to fear, it doesn't mean harm or damage."* (T1.77)

Physiotherapists who are intolerant of uncertainty defined as *"the tendency to react negatively on an emotional, cognitive and behavioural level to uncertain situations and events"* may have a stronger belief that patients could experience an adverse reaction in terms of increased pain to exercise and activity [21].

> *"I think it's quite important to make sure whatever we suggested in terms of exercise isn't worsening their pain, because that's a bad thing, they'd also then have a bad impression of physiotherapy."(T6.79)*

Keep it simple: use of a 'simple' exercise programme was seen as the solution to the perceived barriers such as habitual inactivity, lack of time, or where concerns existed about exercise increasing the pain.

> *"I just want to make sure that they do something that's simple and not particularly difficult or challenging and get them on board that way….." (T6.46)*

Discussion:

This study supports the suggestion that physiotherapy practice is not always consistent with models of patient-centred care identified in the physiotherapy

literature [22, 23] and frameworks underpinning a shared decision making consultation [2, 5].

An important context for shared decision making is the existence of 'equipoise', where competing management options need to be deliberated, taking into consideration patients' informed preferences [5]. However in situations where health professionals hold strong views regarding the evidence for certain treatment approaches equipoise is unlikely to exist. With the exception of one participant, there appeared to be a degree of power asymmetry in that the responsibility for making decisions lay largely with the physiotherapists, rather than a collaborative patient-centred approach. With the patient's readiness and willingness to instigate the proposed plan based on an implied consent model [24]. This may be part of the functioning necessary for achievement of clinical activities such as exercise prescription as it establishes and maintains the clinical relationship in terms of both parties treating the clinician as the one to provide authoritative treatment [5]. Accepting that not every patient would want to be involved in the decision making due to information and power imbalances in the relationship [25, 26], patients were rarely asked to identify their own values or preferences for treatment involving exercise, and what would serve as an acceptable goal or outcome from the episode of care. The absence of goal setting supports the findings of previous research [27], despite it being considered by the American College of Sports Medicine (ACSM) to be the most important undertaking in developing a programme of regular exercise [28].

Determining the type of exercise revealed a tension between physiotherapists' interpretation of the evidence and their everyday practice. For this group of physiotherapists an apparent conflict existed between empowering patients to take control by undertaking an exercise programme they found fun or enjoyed, and offering a 'specific' exercise programme based on physical impairments and pain patterns derived from assessment [29].

Although participants talked about the limitations of a physiotherapist designed home exercise programme in this patient group, it still appeared to be part of their normal routine. It could be that the physiotherapists felt they had not done their job properly unless they gave the patient a specific regime of home exercises to do, reinforcing their own professional identity as 'physiotherapists'. The way in which physiotherapists act is often constrained by the situation, with ready-made routines [30]. This may be the case for the physiotherapists in this study, in that the decision to use exercise, perhaps even a typical 'recipe' of exercises, defines the normal routine or customary practice.

Throughout the study use of the term 'prescription' was open to interpretation. Based in part on the desire by the physiotherapists to encourage patients to exercise, the notion of fostering patient engagement suggested a tendency towards a compliance based approach. Through this approach patients were encouraged to conform in some way to the recommendation to exercise rather than a collaborative (concordant) approach in which goals and preferences for therapy were discussed and mutually agreed between the patient and physiotherapist [25, 27]. Physiotherapists' main strategy to foster patient engagement was to keep the

444 exercises simple so that the patient would do ‘something’, and the option ‘to do
445 nothing’ in terms of a treatment intervention did not appear to sit comfortably with
446 some physiotherapists.
447
448 Strengths and limitations:
449 The purposive sampling strategy was successful in recruiting physiotherapists with
450 extensive experience of managing patients with NSCLBP using exercise based
451 management strategies which adds to the credibility of their accounts. This together
452 with the direct observation of the physiotherapists’ means there is good reason to
453 believe that clinical practices and values that were expressed during the interviews
454 were an accurate reflection of their normal practice, and potential biases such as
455 socially desirable responses were minimised. Mulhall [31] also felt most
456 professionals are too busy to maintain behaviour that is radically different from
457 normal thus limiting the potential effect of the physiotherapist observer on clinical
458 practice.
459
460 Deciding on appropriate research methods to capture evidence of shared decision
461 making occurring in clinical encounters is a challenge. For the purposes of this
462 research shared decision making was considered a process in which
463 physiotherapists adopted specific behaviours to achieve a mutually agreed health
464 care choice with patients. Nevertheless power relationships in most healthcare
465 consultations are asymmetric, with the health care professionals approach typically
466 dominating the interactional process, as patients rarely ask to be involved in decision
467 making [26]. This perception of apparent asymmetry in decision making is, however,
468 not necessarily wrong and may be part of an interaction that is collaboratively

produced by the patients and physiotherapists to establish and maintain the clinical relationship. To investigate this further details concerning how NSCLBP patients interpret their experiences and preferences for involvement in decision making regarding exercise interventions have been reported in Stenner *et al*. [32].

Conclusions:

Physiotherapists used a process of decision making consistent with a practitioner centred process with an emphasis on a didactic and compliance orientated delivery of exercise, with patients having little voice or interaction in the decision. The findings offer a deeper understanding of the potential mismatch that exists between the rhetoric of health care policy and clinical practice. Part of the explanation for this mismatch could be based on how sharing of decisions is viewed and defined by both physiotherapists and patients. However the findings from this research suggests that physiotherapists should reflect on their practice and critically appraise their approaches to the prescription of exercise therapy in the management of patients with NSCLBP to ensure that the care they deliver is truly patient-centred.

Ethical approval: National Research Ethics Committee South West 3 (11/SW/0042).

Funding: No external sources of funding.

Conflict of interest: None declared

[1] Picker Institute Europe. 'Invest in engagement'. Picker Institute website Available from: http://www.investinengagement.info [Accessed 10 June 2012].

493 [2] Coulter A, Collins A. Making shared decision-making a reality. No decision about
494 me, without me. London: King's Fund; 2011. Available from:
495 http://www.kingsfund.org.uk/publications/making-shared-decision-making-reality
496 [Accessed 14 June 2012]

497 [3] Slade SC, Molloy E, Keating JL. 'Listen to me, tell me': a qualitative study of
498 partnership in care for people with non-specific chronic low back pain. Clin Rehabil.
499 2009;23(3):270-80.
500 [4] van Middelkoop M, Rubinstein SM, Verhagen AP, Ostelo RW, Koes BW, van
501 Tulder MW. Exercise therapy for chronic nonspecific low-back pain. Best Pract Res
502 Clin Rheumatol. 2010;24(2):193-204.
503 [5] Elwyn G, Edwards A, Kinnersley P, Grol R. Shared decision making and the
504 concept of equipoise: the competences of involving patients in healthcare choices.
505 Br J of Gen Pract. 2000;50(460):892-99.

506 [6] National Institute for Health and Clinical Excellence. Low back pain. Early
507 management of persistent non-specific low back pain. London, United Kingdom:
508 National Institute for Health and Clinical Excellence; 2009.
509 [7] Freburger J, Carey TS, Holmes GM, Wallace AS, Castel LD, Darter JD, et al.
510 Exercise prescription for chronic back or neck pain: Who prescribes it? Who gets it?
511 What is prescribed? Arthritis Rheum (Arthritis Care Res). 2009; 61(2):192–200.

512 [8] Liddle SD, Baxter GD, Gracey JH. Physiotherapists' use of advice and exercise
513 for the management of chronic low back pain: a national survey. Man Ther.
514 2009;14(2):189-96.

515 [9] Suleman A, Heffner KD. Exercise prescription. Medscape [Internet]. Available
516 from: http://emedicine.medscape.com/article/88648-overview [Accessed 8 May
517 2013]

518 [10] Slade SC, Molloy E, Keating JL. People with non-specific chronic low back pain
519 who have participated in exercise programmes have preferences about exercise: a
520 qualitative study. Aust J Physiother. 2009;55(2):115-21.
521 [11] Rankin G, Rushton A, Olver P, Moore A. Chartered Society of Physiotherapy's
522 identification of national research priorities for physiotherapy using a modified Delphi
523 technique. Physiotherapy. 2012;98(3):260-72.

524 [12] Gadamer HG. Truth and method. 2nd rev.ed. New York: Continuum; 1996.

525 [13] Debesay J, Naden D, Slettebo A. How do we close the hermeneutic circle? A
526 Gadamerian approach to justification in the interpretation in qualitative studies. Nurs
527 Inq. 2008;15(1):57-66.

528 [14] Flood A. Understanding phenomenology. Nurse Res. 2010;17(2):7-15.
529 [15] van Manen M. Researching lived experience: Human science for an action
530 sensitive pedagogy. 2nd ed. London: Althouse Press; 1997.

531 [16] Pengel LH, Herbert RD, Maher CG, Refshauge KM. Acute low back pain:
532 systematic review of its prognosis. BMJ. 2003;327:323-27.

533 [17] Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psych.
534 2006;3(2):77-101.

535 [18] Seale C. The quality of qualitative research. London: Sage; 1999.

536 [19] Jack K, McLean SM, Klaber Moffett J, Gardiner E. Barriers to treatment
537 adherence in physiotherapy outpatient clinics: A systematic review. Man Ther.
538 2010;15(3-2):220-28.
539 [20] Bishop A, Foster NE, Thomas E, Hay EM. How does the self-reported clinical
540 management of patients with low back pain relate to the attitudes and beliefs of
541 health care practitioners? A survey of UK general practitioners and physiotherapists.
542 Pain. 2008;135(1-2):187-95.
543 [21] Simmonds MJ, Derghazarian MS, Vlaeyen JW. Physiotherapists' knowledge,
544 attitudes, and intolerance of uncertainty influence decision making in low back pain.
545 Clin J Pain. 2012;28(6):467-74.

546 [22] Cooper K, Smith BH, Hancock E. Patient-centredness in physiotherapy from the
547 perspective of the chronic low back pain patient. Physiotherapy. 2008;94(3):244-52.

548 [23] Kidd MO, Bond CH, Bell ML. Patients' perspectives of patient-centredness as
549 important in musculoskeletal physiotherapy interactions: a qualitative study.
550 Physiotherapy. 2011;97(2):154-62.

551 [24] Fenety A, Harman K, Hoens A, Bassett R. Informed consent practices of
552 physiotherapists in the treatment of low back pain. Man Ther. 2009;14(5):654-60.
553 [25] Edwards I, Jones M, Higgs J, Trede F, Jensen G. What is collaborative
554 reasoning? Adv Physiother. 2004;6(2):70-83.
555 [26] Harrison K, Williams S. Exploring the power balance in physiotherapy. Br J Ther
556 Rehab. 2000;7(8):355-61.

557 [27] Larsson I, Liljedahl K, Gard G. Physiotherapists' experience of client
558 participation in physiotherapy interventions: A phenomenographic study. Adv
559 Physiother. 2010;12(4):217-23.

560 [28] American College of Sports Medicine (ACSM). ACSM's Guidelines for Exercise
561 Testing and Prescription. 6th ed. Philadelphia, PA: Lippincott Williams and Wilkins;
562 2000.

563 [29] Daykin AR, Richardson B. Physiotherapists' pain beliefs and their influence on
564 the management of patients with chronic low back pain. Spine. 2004;29(7):783-95.

565 [30] Dall'Alba G. Learning professional ways of being: Ambiguities of becoming.
566 Educ PhilTheory. 2009;41(1):34-45.

567 [31] Mulhall A. In the field: notes on observation in qualitative research. J Adv Nurs.
568 2003;41(3):306-13.

569 [32] Stenner R, Swinkels A, Mitchell T, Palmer S In preparation

570

570 **TABLES and FIGURES**

Steps in the analysis	**Description of each step in the analytic process**
1.Creating the texts:	Creating the texts, listening, reading and being immersed in each participant's text.
2.Identifying interesting features:	Making notes of initial ideas, interesting features and messages in their texts.
3.Initial coding:	A hermeneutic view resists the idea that there can be one single authoritative reading of a text. To increase the rigour of analysis a three stage iterative process was undertaken: 1. Mainly descriptive attempt at coding 2. Initial coding hidden and a second round of coding based on a tentative interpretation from the researcher's horizon was undertaken 3. A final coding based on a conclusive interpretation was written Coding tables for each of the participants were then constructed with the corresponding data extracts.
4.Development of themes:	A manual approach was used to identify the common patterns in the texts to form potential sub-themes and themes, relating these themes to data extracts from each participant.
5.Refining the themes:	The main themes and sub-themes were further refined through continuation of the iterative process. Individual text interpretation summaries were sent to each participant to allow them to comment on the interpretations made by the researcher. Key themes were then presented to two colleagues with experience of managing patients with NSCLBP for their opinions as to whether the interpretations were acknowledged as conversant to their own experiences. [13]
6.Producing the report:	Relating the analysis back to the research aims and literature, and producing a scholarly report of the analysis.

571

572 Table 1. The process for interpretation of the texts.

Themes	Sub themes
1. I want them to exercise	• Defining the options available • I try and get people to think about it from my point of view • Checking patient understanding and ability to implement the plan
2. Which exercise? - the tension between evidence and everyday practice	• Interpreting the evidence • Exercise needs to be fun • It depends on what I find
3. Compliance-orientated more than concordance based	• Pinpointing the barriers • Keep it simple

Table 2. Themes and sub themes relating to how shared decision making and patient participation are addressed in the process of exercise prescription.

Themes were developed and refined through an evolving iterative process (see Table 1). Where appropriate the participants' own language has been retained in the theme headings.

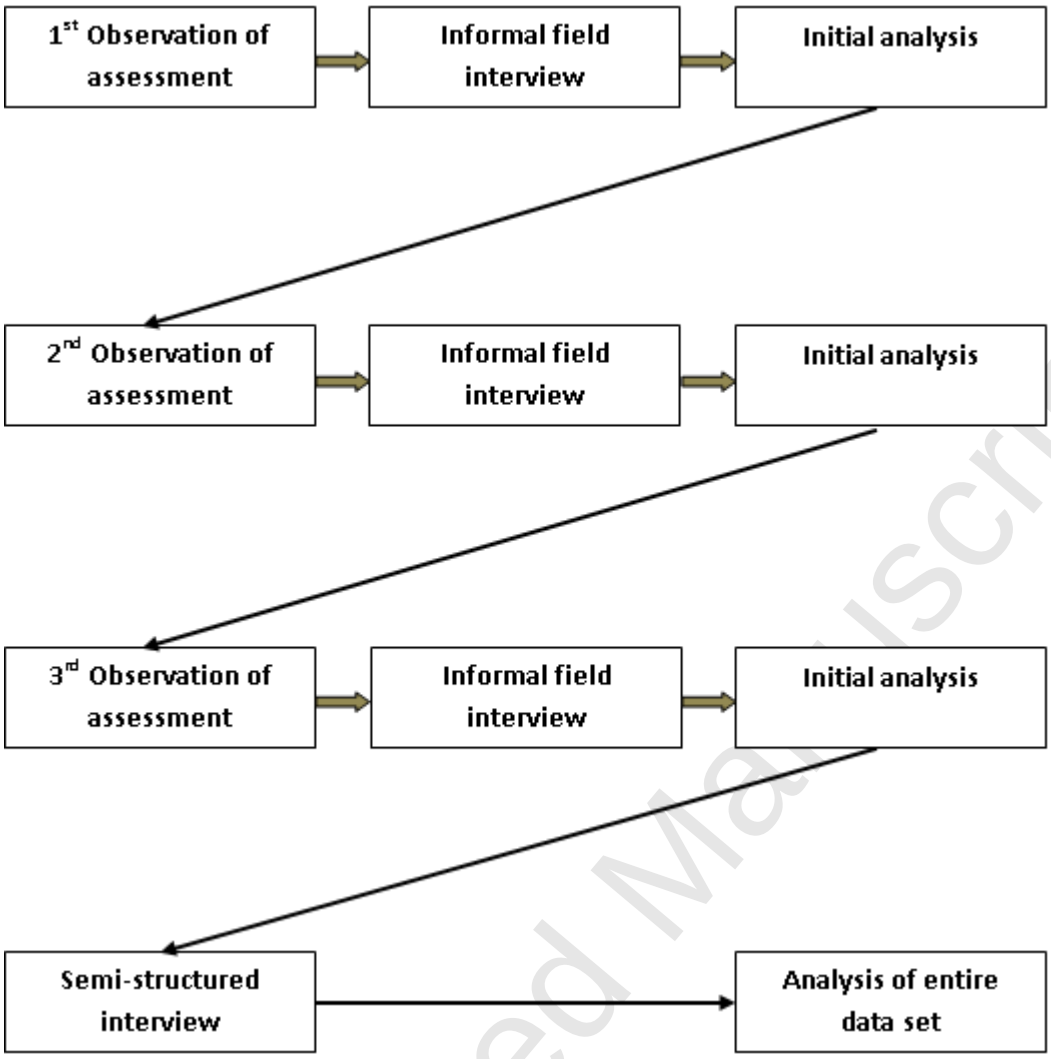

Figure 1. The sequence of interviews with and observations of physiotherapists and their patients.