



**How health care providers can help change  
goal setting of LBP-patients from pain-  
oriented to function-oriented.**

Qualitative evaluation of an innovative  
multidisciplinary outpatient care program

**Work and Employment**

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## Introduction

In industrialized countries workers with low back pain (LBP) mean a heavy human, societal and economic burden<sup>i</sup>. The total annual cost of LBP to the Dutch society is estimated to be € 4.6 billion, 7% health care related and 93% primarily related to long-term disability<sup>ii</sup>. Although, in general, the prognosis for return-to-work (RTW) is good, approximately 10% to 25% of the patients remains long-term absent from work<sup>iii</sup> and becomes at risk of social and financial deprivation. This group of LBP patients, furthermore, causes 75% of the sick leave and disability costs<sup>1,iv</sup>. These patients often have a long, medicalizing history, consisting of all kind of different treatments, mostly aiming at eliminating pain, often ending up in secondary curative care, where attention to work-related aspects, including to work resumption, is often lacking<sup>v</sup>. Also cooperation and information exchange between treating and occupational physicians is often insufficient<sup>vi</sup> - another obstacle for RTW<sup>vii, viii</sup>. Research shows that work related problems are associated with an increase in seeking medical care and sick leave<sup>ix</sup>. However, there is strong evidence that most clinical interventions are not effective for RTW<sup>x, xi</sup>.

So it seems useful to develop and test a specific program, aiming at work resumption including work(place) intervention and graded activity, with functional restore as leading principle instead of pain reduction.

To date, quantitative research has frequently been done to evaluate the effectiveness of innovative interventions for LBP patients<sup>xii, xiii, xiv</sup>. But, although some interventions proved to be effective, they are frequently not in use in daily practice. To successfully implement an innovative program it is important to take notice of barriers and facilitators to change practice, for example, at the level of the patient, the professional or the innovation it self<sup>xv</sup>. Seldom however the implementation and perceived effectiveness has been evaluated from the point of view of patients and health care providers (HCP).

Since this is a relatively underdeveloped area of implementation research, we have chosen an explorative study design with a qualitative evaluation among patients as well as health care providers. This qualitative study is part of the BRIDGE-study, a large randomized controlled trial designed to evaluate the (cost-) effectiveness of a Multidisciplinary Outpatient Care (MOC) program for RTW, compared with usual care<sup>xvi</sup>. MOC is a case management program provided by a multidisciplinary team and coordinated by a care manager, consisting of a workplace intervention - based on participatory ergonomics and applied by an occupational therapist - and a graded activity intervention, applied by a physical therapist using cognitive behavioral principles (See table 1). The two interventions are chosen because recent research shows that long-term work disability is not only due to the patient's personal characteristics but is also a consequence of an interaction with the patient's environment (the workplace system, compensation system, healthcare system)<sup>12</sup>. The workplace intervention is focused on the work system (worker, supervisor), the graded activity intervention is directed to the patient's illness behaviour (pain cognitions, pain coping). Moreover, the care manager, a clinical occupational physician, will coordinate the care and communication process between all providers in the health care system to ensure a common return-to-work goal.

The study population consists of patients with chronic LBP who are sick listed and visit a medical specialist in an outpatient clinic. More detailed information about the BRIDGE-study can be found elsewhere<sup>16</sup>.

Table 1: Explanation of the work adaptations and graded activity intervention

<p><u>Workplace intervention</u></p> <p>Aim: Achieve consensus by all stakeholders about the adjustments for the workplace to facilitate RTW.</p>	<p><u>A worksite assessment</u></p> <p>observation of the workplace of the patient; obstacles for RTW are ranked by patient and patient's supervisor independently; patient, supervisor and OT brainstorm and discuss about all possible solutions for the obstacles until reaching consensus.</p>
<p><u>Graded Activity intervention</u></p> <p>Aim: Restore occupational function of the patient and supervise the patient back to work.</p>	<p><u>Clinical intervention</u></p> <p>baseline (3 times) to test the functional capacity of the patient. an individually graded exercise program, based on cognitive behavioral principle, which teaches the patient that it is safe to move while increasing the level of activity, despite the pain.</p>

## Objective

The objective of this qualitative study is to explore the experiences of patients and health care providers with an innovative multidisciplinary outpatient care program (MOC). The experiences were explored by addressing the following main themes: perceived effectiveness, compliance, barriers, facilitators and applicability. We defined compliance to the program as the extent to which patients and their health care providers accepted functional restoration and RTW as leading principle of the program instead of pain reduction. The main research question is how patients and their health care providers perceive the effectiveness of that program for recovery and RTW.

## Subjects and Methods

As this explorative qualitative study evaluates how the MOC program was experienced by patients and health care providers, both groups of subjects were asked about their experiences with the program. Patients were interviewed using in-depth, semi-structured interviews, health care providers have been interviewed in multidisciplinary focus groups.

### **Participating patients**

The source population consisted of LBP-patients (18-65 years) who visited an outpatient clinic from the participating hospitals. The patients that met the inclusion criteria were assigned at random to the experimental group that was given the MOC program, or to the control group, getting usual care. Between January 2006 and February 2007 twenty-nine participating patients were interviewed, by telephone, lasting about 20-45 minutes. A semi-structured interview schedule was used during the interview to question the patients. Topics such as sick-leave, motivation, expectation, evaluation of the program (graded activity and work adaptations) and return to work were addressed. As a saturation point was reached twenty consecutive interviews were analyzed. Nine patients were male and eleven patients were female. In average, patients were 46 years old (range of 29 to 60 years of age) with sick leave duration between two and twelve months (mean duration of sick leave was 5,7 months).

### **Participating health care providers**

The second group of subjects in this study consisted of health care providers applying the MOC program. This group consists of two clinical occupational physicians (both being care manager), three occupational therapists, eight physical therapists (working in ten practices), and the patient's medical specialist. To evaluate their experiences with the MOC program, focus groups were used. This method was chosen because it gave the health care providers the possibility to interact with each other, which could elicit specific information about the evaluation of the program such as one's attitudes, feelings, beliefs, experiences and reactions, which would be less easily accessible in a one-to-one interview<sup>xvii</sup>.

Two focus groups were held, each lasting almost two hours. The first one was held nine months, and the second sixteen months after the start of the implementation of the program. Health care providers were only asked to join a focus group when they had seen at least two participating patients. The composition of the participants was carefully selected to ensure that all disciplines were present during the focus groups (see table 2). During the focus group, the professionals were asked to bring forward and discuss their experiences with the program. Specific questions and topics were addressed such as communication, effectiveness and barriers.

Table 2: Composition of Focus groups

	Focus group 1 (n)	Focus group 2 (n)
Occupational physician	1	1
Medical specialist		1
Physical therapist	2	4
Occupational therapist	2	1
Total	5	7

### Analysis

The patient interviews and both professionals focus groups were recorded and transformed in a verbatim transcript and analyzed with *Atlas.ti*: software that can be used to facilitate coding and analyzing of transcripts, such as retrieving related segments and sub-themes. Data from both sets of transcriptions were analyzed by constant comparison method<sup>xviii, xix</sup>. First, fifteen interviews with patients were analyzed to identify themes. Secondly, additional interviews were held to confirm the theoretical saturation in which there has been explicitly searched for further examples of themes<sup>xx, xxi</sup>. Finally, theoretical themes were related to themes found in the data of the focus groups. Two co-examiners, one directly and the other not directly involved in the project, were to test the inter-subjective agreement in the following way: quotations were presented separately to the co-examiners, who were to match quotations with codes and themes. More frequently reported codes are reported in this article.

## Results

In this study the main aim was to explore the evaluation of the program by the patients and the health care providers working with the MOC program. Therefore, perceived effectiveness – how participants and professionals evaluated the program to be effective for recovery and RTW - will be the first theme addressed. Perceived effectiveness will be the first theme addressed. Thereafter compliance, barriers & facilitators and applicability to the program will be further elaborated on. Emerging themes will be linked to these topics.

### Perceived effectiveness

In general, patients and health care providers evaluated the program as an effective instrument for managing low back pain and rehabilitation as it promotes functionality and capability for work. Patients also report noticeable functional improvement and a reduction in physical complaints, although the latter is not the primary principle of the program. These findings in general suggest that the program has been perceived as an effective rehabilitation instrument, but a refinement has to be made: some patients perceived the program to be ineffective and found themselves in a state of despair which will be elaborated later on (see box 1).

#### Box 1 Perceived effectiveness by patients and Health care providers

'Such a physiotherapist only looks at the functioning of body and muscles. He is aimed at that and that is where the emphasis lies. It isn't on the pain and complains that you experience (.....). But again, the goal of the program is the improvement of functioning, increasing strength et cetera, from that perspective it worked perfectly' (male patient, age 42, marketing and sales official).

'Well, I think that graded activity with the physical therapist isn't working because it is too short. Because they try to strengthen the muscles but that isn't possible in such a short time and my own physical therapist, well, he also massages, he loosens up the muscle. I receive other exercises and with the Bridge-project it is a lot more though or harder than with my usual physical therapy ( ..)'(female patient, age 40, mail carrier)

'(...) it seems as though it is reasonably effective in that it will support its goals but if the patient is satisfied they are not free of complaints but that was not its treatment goal and you have to convince your patient (...)' (Physical therapist)

### Compliance

In this study compliance - the manner in which patients (and health care providers) adopt the principle of the program in that it is aimed at function restore instead of pain reduction - is the second theme addressed. Patients' understanding of the basic goal of the MOC program is an important element for compliance. Overall, patients finish the program and understand the goal of the program: functional improvement and not pain reduction.

Almost all patients characterize themselves by a long medical history with many years of LBP. They frequently visited different medical practices and health care providers such as manual therapists, physical therapists, chiropractors or osteopaths, but often



without results because mostly those visits didn't lead to functional improvement in the long run. This explains the fact that most patients aimlessly entered the program and failed to formulate a clear expectation and motivation. This can negatively influence patient's compliance, especially when expectations do not match with treatment goals (see box 2).

#### Box 2 Compliance: expectations

'I didn't have much faith because, well, because my last treatment with the physiotherapist, well, she made me do all sorts of exercises and, well, because of that I developed this hernia and well in this project it did work out ok but (...)' (male patient, age 53, entrepreneur)

'To be honest, not that by doing exercises and fitness I could get rid off this pain. That I didn't expect. But I tried it because I thought everything that can help, I have to try, but I was very sceptical about it' (female patient, age, saleswoman)

'well, neutralizing this hernia, that did stay in the back of my head/mind?. I didn't really trust that it would be gone but it did matter (...) anyway functionality did climb' (male patient, age 42, sales support manager)

'I expected a new method to learn to sort of to handle your back pain and also to learn new exercises that you can do to (.....) reduce? complaints. That I expected.' (male patient, age 36, entrepreneur)

### Barriers

How patients and professionals perceive the program to be effective for recovery and RTW depends partially on the perceived barriers and facilitators that participants and health care providers experience. Barriers are aspects related to the program that patients (and health care providers) perceive as a hindrance for compliance and eventually for perceived effectiveness. Facilitators on the contrary are aspects that are helpful for patient and health care professional to implement and finish the program. Furthermore, perceived barriers tended to be related on the one hand to the patient's personal characteristics (internal barriers) and on the other hand to the patient's environment such as the workplace system and the healthcare system (external barriers).

#### *Internal Barriers: Despair*

Findings suggest that differences in perceived effectiveness by patients can be explained by differences in perceived barriers – internal and external - and as a consequence in compliance to the program. Despair was found to be such an internal barrier, reflecting the participant's experience of their problems as being unsolvable and pain-oriented. Patients experiencing despair characterize themselves by externalizing their problems which, in turn, had considerable consequences for their compliance. This group perceived the program, in general, as ineffective and as a consequence reported more divergent barriers such as the graded activity intervention being too short, too painful and too intensive. In comparison with patients, who did not experience despair, this group tended to be more focused on pain reduction and as a consequence evaluated the MOC program to be unsuccessful in achieving their goal. In addition MOC did not offer these patients an alternative way of dealing with LBP (see box 3).

## Box 3 Internal barriers

'it is stupid that it ended up as it did, but I experienced something like that I was fed up with it. All the time running to doctors and staying of work and also entering BRIDGE-project. I went crazy (...) I think that it will not pass. Well, maybe after a very difficult surgery. But even then i am not sure if it will work and I could still walk after that (....) It is very tiresome, very hard' (female patient, age 54, entrepreneur).

'To find out if there is any medicine that would really work. But you are not really looking in to that. I do not think that there are any. Because, my doctor already prescribed a medicine twice and that just didn't help. Than you just try things, you are searching for things for yourself. Soles for your shoes, a corset, all sorts of things. Ointments and stuff. But that doesn't help either. Than, you try vitamin pills for your back and that kind of stuff (....) I do not think that there is anything for it, I do not really know what to do (...)' (female patient, age 40, mail carrier)

'I only went twice, once to discuss everything and once for the training (...) I experienced more pain because of the therapy. When I exercise I have pain and it gets more and more sore. I stay depressed(male patient, age 41, cleaner)

*External barriers: patient's environment*

External barriers tended to be related to the patient's environment such as the workplace system and the healthcare system. The first barrier can be found in the workplace system: lack of supervisory support (see box 4).

A very important element in the MOC program is the protocolled communication process designed to overcome communication problems by keeping all HCP and other stakeholders on side. However, this communication process does not help when communication problems represent a conflict, in which parties have irreconcilable interests (see box 4).

## Box 4 External barriers related to the workplace system

'at my work they are trying to improve work quality and that was part of our own occupational health desk and their ergonomic had already done a great deal of things in my line of work as for administration and accounting and my boss had a suspicion that if this workplace intervention in the MOC program also was executed things were obstructed or changed again and I tried to explain (...)'(female patient, age 56, doctor's receptionist)

'no no. Because the three ergonomic solutions that we agreed upon, none of it has been done and it never will be. I also told the occupational therapist this, as I do to you, in a few lines, although it is all very nicely intended they do not want to take you seriously and you have seen it and noticed, so you do not really have to try to do anything for me. And it is not that I ask for anything difficult (.....)' (female patient, age 36, saleswoman)

'with a more difficult communication between employee and employer if that is the case and they are just not used to talk to each other than it can really work (...) however when there are a lot of other issues and upbraid than this doesn't really work, sometimes this only makes things worse (...)'(occupational therapist)

A second barrier in the patient's environment can be found in healthcare system and addresses the waiting period before the graded activity program can start which depends on the accessibility between different health care providers. Graded activity can only start when the patient's company doctor had been consulted and approved the patient's participation. This can prolong the waiting period and emerged as a barrier for program implementation (see box 5), because patients decide to seek other treatment in the meantime.

Box 5 external barriers related to the health care system: waiting period.

'in some cases patients do not know their own company doctor; they have only visited him or her once or not at all. In the worst case scenario they do not even know if they got an occupational health service anyway (...) once you have traced an occupational physician than you have to (..) wait till a specific moment (..) but reaching the right person and contacting them is sometimes difficult. And it isn't just this one case, that's the issue ( ...)' (occupational therapist).

'or I didn't receive a return call, even though I did leave a message and what so ever, and still I did not receive a phone call and than I made the decision myself to get a referral note from the general practitioner myself (...)' (female patient, kinder garden teacher, age 47).

A final barrier, medicalization – frequent treatments, long in duration, can also be found in the health care system and is closely related to compliance. Because most patients have a long medical history they are not only unsure of what they could expect but are often also medicalized and not encouraged to be active. As the health care system for LBP is primarily directed at pain reduction, patients are often not encouraged to be active in their normal activities, including work. So this situation induces passivity, chronicity and powerlessness. Hence, patients are influenced by former experiences with the health care system and more focused on pain reduction for instance by massage and relaxation of the muscles, which in turn also influences the patient expectance. This causes the patient to become more entangled in a tug-of-war between usual health care providers and health care providers within the Bridge-project, which consequently, negatively influenced compliance to the MOC program. (Box 6).

Box 6 Barriers related to the health care system: medicalization

#### Tug-of-war between various stakeholders

'when considering people in general, people want to get rid of their pain and it takes a lot of communication from all professionals, that this is not the goal of this program' (physiotherapist)

'you have indeed a group of patients with chronic pain with a long anamnesis that tried everything and thinks well this is my last salvation and these patients are more focussed on pain reduction than on work resumption because this was out of reach for them for a long time or they have given up on this already or whatever'(occupational therapist)

'yes. I did tell you right? That I stopped the program for a while? Because I was in so much pain that I went on with the treatment by my chiropractor. And well, he said that I should stop with the program. The program was opposite to his treatment (female patient, age 54, entrepreneur).

## Facilitators

Besides barriers also facilitators – internal and external - could be identified. The patient's own disciplinary motivation is an internal facilitator. Two other characteristics of the program also act as external facilitators: the protocolled communication process and the tailor-made exercises in the graded activity intervention. This last facilitator is specific to the program's applicability.

### *Internal facilitator: motivation*

Patient's disciplinary motivation - the inner drive to reach ones own personal goal - has a positive influence on compliance as it stimulates the patient to be persistent in doing the exercises (see box 7).

Box 7 Internal facilitator: Patient's internal disciplinary motivation

'I think that my expectation of the Bridge project has been fulfilled but you have to support the idea of it. Not that you think well they helped me so far and now it's okay. No, you really have to work on it yourself, you have to keep doing those exercises and keep reminding yourself how to use your back, sort of (...)'(female patient, age 41, domestic service official , age 29)

'I thought that I could benefit from this, between brackets of course, but that someone is going to tell me what needs attention and bringing some discipline into it (...) because of course I know myself and since 1982 once you are bothered by complaints you act and when not than not, it is that simple, doing the movements and exercises, so I saw some motivation and discipline that I could benefit from' (male patient, head construction supervisor, age 50).

### *External facilitator: Communication*

Another facilitator related to the program characteristics is the protocolled communication process which is especially designed to overcome communication problems and to keep all persons involved. This counteracts supervisory (and subordinate) resistance about workplace adaptations (in the workplace system) which can be beneficial to overcome communication problems at work.

Furthermore, the protocolled communication process also stimulates information exchange between health care professional and patients, which can prohibit medicalization. Although compliance could be endangered by incompatible expectations the program can prevent incompatible expectations by an extensive guided process monitored by the care manager, the medical specialist, physical therapist and occupational therapist. The program therefore ensures a thorough information exchange between health care providers themselves and between them and the patient, which positively influences the patient's compliance. The amount of information exchange between patient and health care professional encompass clear explanations, advice and goal setting which could positively adjust a client's former incompatible expectation and motivation in relation to the program. Consequently, this readjustment contributes to a patient's compliance. In general, patients evaluated this as an important positive characteristic, which stimulated them to persevere and complete the treatment program. Furthermore, the program stimulates communication and harmonisation between different health care providers within and outside the program, which in turn stimulates a multidisciplinary point of view and the professional's mutual agreement about treatment goals.

As a consequence this prevents further medicalization and ensures that patients expectations are compatible with the goal of MOC program in that it is aimed at improving functioning and RTW which in turn gives them alternative ways to handle their LBP (see Box 8 ).

#### Box 8 External facilitator: communication

##### Information

'when considering the MOC program (...) by giving the right explanation about the fact that one has to stay active and that one cannot break anything I was really motivated to go on' (female patient, age 56, doctor's receptionist).

##### Protocolled communication

'it has done a lot for me; i cannot conclude any differently than that it has made something very clear to me. I could talk freely about my job. In first instance, i was hesitating about talking about it (...). But it made a lot clear to me' (female patient, kinder garden teacher, age 60).

'it is primarily interesting when information can be exchanged which only one of us has, for example information from the work adaptations which is sent to the physiotherapist and I think it is very efficient to have an overview' (occupational physician)

'additional information from the ergonomic or the occupational therapist, as with that specific patient, you receive specific information based on a different expert's appraisal which is different from your own appraisal (.....) I think that the multidisciplinary aspect is it's selling point' (physiotherapist).

'when I have problems with a patient who is not entirely convinced about the diagnosis for example than I have really positive experiences with colleagues such as the occupational therapists because they are prepared to have another evaluation with the patient by which they try to set them straight (physiotherapist).'

#### *External facilitator: Tailor-made exercises*

Finally facilitators identified are also the tailor-made exercises which facilitate the program's applicability which is related to how easily principles within the MOC program are applicable in practice. As these facilitators are helpful to patients to integrate new motor skills and techniques of movement into daily live they are facilitators to the program's applicability and described beneath (See box 9).

#### Box 9 External facilitator: Tailor-made exercises

'I think that they are fine and when I asked how to do them than it was further explained to me. So, yes, and it seems as if you get a sort of automatic way of doing things, those exercises, as you do things in normal life' (female patient, age 46, nurse).

'there has been looked, because well most of my work or my conditions are primarily administrative activities and driving to work and back and sitting long on one place without the freedom to stand up (.....) that was in the past of course, now it has been improved, so now lam not so bothered. Also because the ergonomic advised to improve the car chair, to improve the sitting posture by adding foam. Well that worked out fine' (male patient, age 50. Work foreman).

## Applicability

In general, patients evaluate the program applicability as difficult because it entails readjusting unconscious wrong motor skills or techniques of movement which requires a conscious process of adjusting them. Most patients report difficulty of being constantly aware of one's posture and the negative consequences that it has.

Although patients report difficulty in adapting already existing wrong motor skills or techniques of movement, the applicability of the program is supported by specific tailor made exercises for the patients. Those exercises are selected during the graded activity intervention. In addition, to prevent structural wrong postures at work, specific work adaptations are also part of the program. Overall, patients report that the specific exercises assigned to them during graded activity and the specific work adaptations selected by the occupational therapist can be easily applied by them (box 10).

### Box 10 Perceived applicability

'it is sometimes difficult because you already used a wrong posture for about thirty years and than suddenly using the right posture, well, that are customs that are burned in hardware and are difficult to adjust and that you have to realise that, hé, you are sitting in the wrong way' (male patient, age 53, project manager).

'and certain postures at work in the beginning than you really are thinking about it and they told me it has to become natural do not try to force it..... (female patient, age 46, nurse)

'I just have to be careful and pay attention, but some things that just do not fit in every day live (female patient, age 36, saleswoman).

## Discussion

### Summary

In order to direct LBP-patients from secondary care back to work by graded activity and work(place) intervention, an innovative, patient-activating, stepwise program has been developed and implemented, aiming at functional restoration instead of pain reduction, and at promoting communication between health care providers involved, in order to coordinate their advices to the patients. In a qualitative, explorative study – part of an RCT - the perceived effectiveness of the program was generally evaluated positive by the health care providers and by most patients, although at the start overall patients had low expectations about treatment – which can influence compliance negatively – as they mostly were primarily focussed on pain reduction, as a result of their former health care experiences. Some patients therefore perceived the program to be ineffective, reporting divergent barriers.

### Theoretical framework: Future research

In explorative qualitative research open-mindedness is critical because it allows researchers to investigate a wider area, without in the beginning being preoccupied by specific theoretical constraints. Results can afterwards be fitted in a theoretical framework that can be important for future research. Therefore, now an attempt will be made to interpret findings in a theoretical framework.

In this explorative study compliance emerges as a central issue related to perceived effectiveness, next to the applicability of the MOC program. Several barriers and facilitators influence compliance, like despair, perceived difficulty of program's applicability, medicalization, lack of supervisory support, disciplinary motivation, thorough (protocolled) communication process, tailor-made exercises. These three important elements – compliance, barriers/facilitators and perceived applicability, seems to fit quite well into the theory of planned behaviour by Azjen xxii (see fig 1). In short, this model focuses on what factors determine the likelihood that a person will adopt specific health behaviour such as adoption of program's principle (compliance). Perceived effectiveness can be seen as the desired outcome. This outcome is a result of a behavioral intention. Behavioral intentions are influenced by an objective context (such as the workplace system and the health care system) and a subjective context (such as general attitudes and personality traits as despair and disciplinary motivation)xxiii, xxiv. Lack of supervisory support at work, waiting lists, communication problems and medicalization in the healthcare system can be found in the objective context which will negatively influence the patient's intentions to comply. Despair can be found in the subjective context and is related to general attitudes and personality traits which will negatively influence patients intend. Furthermore, as the actual change in behaviour is also influenced by the person's perception about behavioural control over that action (self-efficacy). Specific recommendations for program improvement are related to perceptions on behavioural control as compliance tended to be a decisive aspect for perceived effectiveness which was negatively influenced by despair and by the perceived difficulty in the program's applicability.

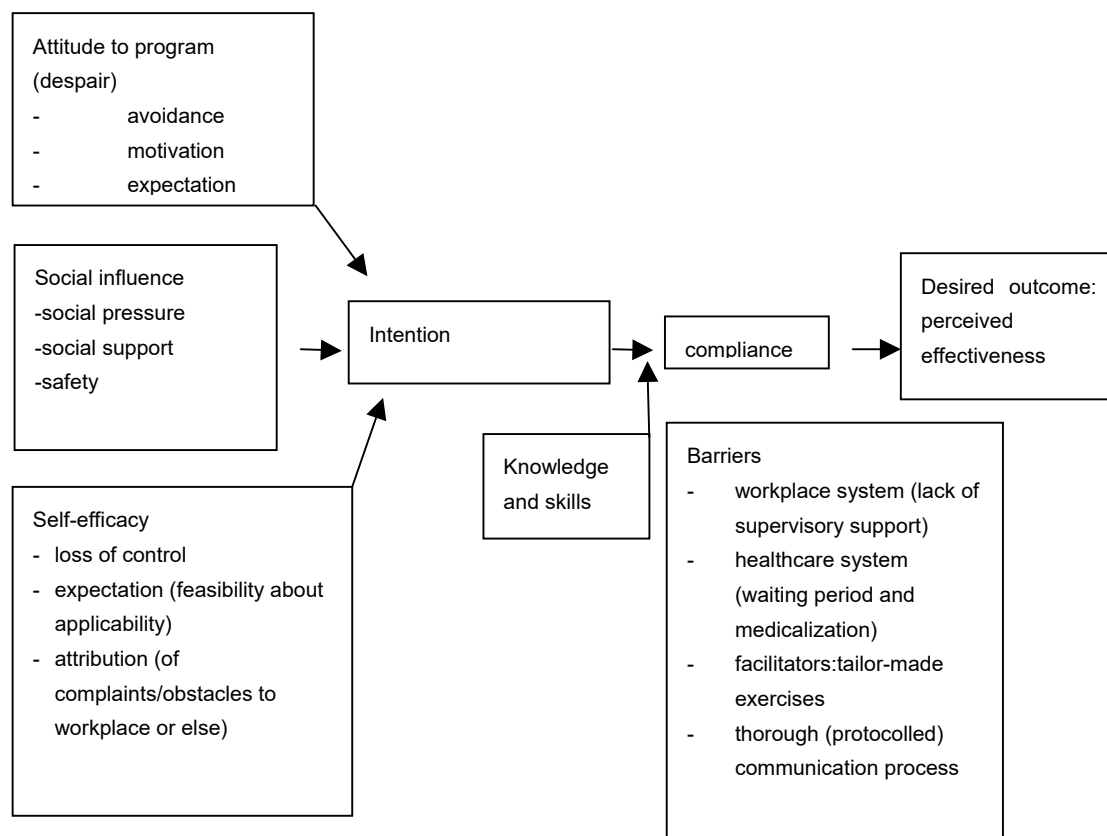


Figure 1: Theoretical framework based on the theory of planned behavior by Azjen & Fishbein<sup>22</sup>.

### Strengths and limitations of the study

The strengths and limitations of the study, to be presented here, are primarily based on the patients interviews, and confirmed by the focus groups of health care providers.

#### *Strengths*

- An explorative qualitative study on how patients experience an activating, goal-oriented, stepwise program, aiming at functional restoration and RTW instead of pain reduction;
- This study includes the experiences of patients as well as health care professionals; It provides deeper insight in working mechanisms behind the program than a quantitative study can do; in combination the two methods give a more complete view on the way the program works out, especially on barriers and facilitators;
- The risk of missing important items is acceptable, because from the 15th patient interview on no relevant new items were found (saturation), while also the health care professionals in their focus groups did not produce new items, compared to the items found in the interviews;
- by focusing on the experiences of patients and the health care providers with the program more detailed information and suggestions for implementation can be formulated



### *Limitations*

- It is unknown how many patients adhere to treatment recommendations over a longer period in time, after finishing the program; because joining the program was voluntarily, maybe less motivated patients (and health care providers) preferred to stay out; Therefore results can only be generalised cautiously;
- Interviews were by telephone, so non-verbal clues could not be noticed;
- focus on users and target group ( workers with chronic LBP)and program characteristics. Other important stakeholders/players for program implementation managers have not been questioned.

### **Comparison with other studies**

Although no comparable qualitative studies were found some studies come close to aspects of ours. We will discuss some of them.

In a systematic review Verbeek c.s.<sup>xxv</sup> mentioned qualitative research showing that for LBP patients it is important to have a clear diagnosis of the cause of their pain, and confirmation from the health care provider that the pain is real, next to providing further information, instructions, pain relief, physical examination, listening and understanding. This influences patient expectations, and by that their compliance. In Verbeek's review and other studies<sup>xxvi</sup> the recommendation to develop new strategies in order to better meet patients' expectations is partly in line with ours – providing good information - because the patients' expectations influences their compliance. As we saw, the expectations of 'our' patients often were quite low and often not in line with the essence of the MOC program: primarily oriented on functional restoration, not at pain reduction.

A limitation of this study lies within the fact that it only entails a short follow-up. As a consequence we do not know how many patients eventually will 'slide back' in former behaviour after finishing the program. This is especially important as compliance emerged as an important factor for the perceived effectiveness and former studies show that a lack of compliance could be seen as the missing link to ineffectiveness of exercises during and beyond treatment<sup>xxvii</sup>. So it is important to make a difference in non-compliance during treatment (short-term compliance) and beyond treatment (long-term compliance) because it requires different compliance-enhancing strategies<sup>xxviii</sup>.

Finally, the LBP patients, who perceived the program effectiveness as negative, often have a long history of LBP, having visited many different health care providers, who often provide treatment (primarily) directed at pain reduction. When these patients are offered an alternative option, oriented at function restore in stead of pain reduction, then it is not surprising that they may have low expectations and that their compliance suffer from several kinds of barriers,. From those who persist in their negative view, it is interesting to question how their goal setting can be changed. In the first place: do they have specific features (sickness absence duration, amount/kind of treatments, (degree of) medicalization, personal characteristics etc) to identify them? Secondly, – most important - is it possible to offer them an alternative treatment program to help them to adopt the program's principle (more tailor-made, with psychological help, etc).

## Policy implications

The positive evaluation of the MOC program by patients and health care providers is important, given the latitude of the chronic LBP-problem and the considerable amount of patients ending up medicalised in outpatient care or other forms of secondary health care, where in general insufficient attention is paid to work-relatedness and work resumption. Our findings correspond to the fact that the medical system often encourages passivity, chronicity and powerlessness, and usual care in LBP is still focussed too much on pain reduction and less on encouraging patients to be active and RTW<sup>10</sup>. Moreover, already for decades it is well known, that the longer absent from work, the higher the chance to stay out of work, more or less independent of the disease or illness at stake<sup>xxix</sup>. The MOC program can offer a way out of this ‘dead-end street situation’ of all kind of treatment of symptoms, not reaching the point of work resumption.

If, next to this qualitative study, the results of the still proceeding quantitative study are positive too, than it seems to be worth while to implement this MOC-program on a larger scale, after having incorporated the many improvement suggestions given during this study, such as:

- still more attention to fixation on pain reduction by some patients e.g. by
- providing patients with better info or psychological treatment to change their goal setting;
- more attention to long term compliance;
- more attention to resistance ‘at the work place’ from supervisors, management, colleagues, and the worker him/herself;
- considering if more attention to early detection and a specific (sub)program is possible for ‘non-compliers’ to the program’s principle;
- more bilateral contact between health care providers to ensure common goals in treatment and avoidance of medicalisation.

Furthermore, this study shows that perceived effectiveness by patients and health care providers is related to program compliance, which in turn is influenced by patient’s attitude/ expectations towards the program and by self efficacy(see Fig 1). Communication and perceived applicability are crucial facilitators/barriers for program compliance.

### Health insurance companies

Implementing MOC on a broader scale can be in the interest not only of the patients/workers involved and of course of their employers, but also of health insurance companies. Under new Dutch more liberal legislation, these companies are supposed to take initiatives beyond their traditional curative borders, in the direction of occupational health care. Up till now however, the presumed market forces do not seem to work that way yet<sup>xxx</sup>.

Next to implementing MOC on a broader scale, maybe also less conventional, more preventive methods have to be used to tackle the LBP-problem. Interesting are e.g. positive experiences from Australia: because of the diverse and sometimes contradictory information in the health care system about (treatment of) LBP - tending to negatively influence the patient’s compliance – the State of Victoria started a media campaign to alter population and physicians’ beliefs about back pain which already showed significant results, compared with another state<sup>xxxi</sup>.

Finally, we recommend to combine quantitative research more with (complementary) qualitative research, so that in the end not only figures, statistics etc are available, but also data giving more insight in and background to the effect of an intervention than would be possible only in a quantitative manner. Combined these quantitative and qualitative data provide a more solid base for a successful strategy to implement real improvements into the health care in general, and occupational health care in particular.

## Conclusions

This qualitative study shows, that the perceived effectiveness of the innovative MOC program was generally evaluated positive by the health care providers and by most patients, although at the start overall patients were quite passive and had low expectations about treatment, as they mostly were primarily focussed on pain reduction, as a result of their former health care experiences. Despite this negative start position and the fact that MOC focuses on function restore instead of pain reduction - the compliance to the program's principle and goal was found to be quite good.

Barriers for compliance were related to the patient's characteristics (internal barriers) and environment such as the workplace and the healthcare system (external barriers). Some patients evaluated the program to be ineffective and reported barriers which tended to be related to personal characteristics such as despair (patients experiencing their problems as being unsolvable and pain-oriented). However, compliance can also be influenced by barriers related to the patient's environment such as supervisory and subordinate resistance (lack of supervisory support), and related to the health care system, where barriers can be seen like unnessecary long waiting time, communication problems, waiting lists and medicalization. Besides barriers different facilitators can also be identified. Disciplinary motivation and specific characteristics of the program such as the thorough protocolled communication process, relevant information and specific tailor-made exercises make it easier for patients to comply and positively influence perceived effectiveness

Final conclusions can't be drawn yet: a RCT of the (cost-)effectiveness of the program will be finished later. Yet this program seems to be promising for application on a broader scale and for further hypothesis-testing regarding new interventions/ implementations, and the way they work out at patients, health care providers and the work(place), trying to give again perspective to LBP patients in despair of ever resume work.

### ***Competing interests***

The author(s) declare to have no competing interests.

### ***Authors' contributions***

All authors have been involved in this qualitative, read and corrected draft versions of the manuscript and approved the final manuscript.

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