Chapter 4

Qualitative evaluation of an innovative work related multidisciplinary programme

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ABSTRACT

Introduction: Workers with chronic low back pain (LBP) mean a heavy human and social-economic burden. Their medical histories often include different treatments without attention to work-relatedness or communication with occupational health providers, leaving them passive and medicalized in (outpatient) health care. So we developed and implemented an innovative, patient-activating alternative: the multidisciplinary outpatient care (MOC) programme, including work(place) intervention and graded activity. It aims at function restore (instead of pain elimination), return to work (RTW) and coordinated communication.

Objectives: To *qualitatively* explore how patients and health care providers perceive the programme effectiveness and which factors influence its implementation.

Methods: In-depth, semi structured interview with patients and focus groups of health care providers are used, all recorded, transformed into verbatim transcript and analysed.

Results: This qualitative study shows that although patients' expectations were low at the start of the program, and despite long LBP histories, including many different therapies, (primarily) directed at pain reduction, the MOC programme was successful in changing patients' goal setting from pain oriented towards function restore and RTW. The programme was therefore perceived as applicable and effective. Patient compliance was influenced by barriers - despair, supervisory and subordinate resistance at work, waiting period, medicalisation in health care - and facilitators: disciplinary motivation, protocolled communication, information supply, tailor-made exercises. For some patients the barriers were too high. Several improvement suggestions were given.

Conclusions: This qualitative study shows that generally, patients and professionals perceived the multidisciplinary outpatient care programme as applicable and effective. After incorporating improvement suggestions this program seems promising for further, broader application and hypothesis testing. For those, negatively evaluating the programme, alternatives should be explored.

INTRODUCTION

In industrialised countries workers with low back pain (LBP) account for a heavy human, societal and economic burden.[1] The total annual LBP costs the Dutch society estimated € 4.6 billion: 7% health care-related and 93% primarily related to long-term disability.[2] Although generally the prognosis for return to work (RTW) is good, approximately 10%-25% of the patients remains long-term absent from work, risking social and financial deprivation, and causing 75% of sick leave and disability costs. [2-4] Many have long histories of medicalisation, consisting of all kinds of long during treatments, mostly aimed at eliminating pain. Often they end up in outpatient curative care, where attention to work-related aspects, including RTW, is lacking.[5] Cooperation and information exchange between treating and occupational physicians is often insufficient[6] - another obstacle for RTW.[7-8] Research shows that work-related problems are associated with an increase in sick leave and seeking medical care[9], but that most clinical interventions are ineffective for RTW.[10-11] Therefore we developed a specific RTW programme. The programme is provided by a multidisciplinary team and coordinated by a care manager: a clinical occupational physician. Leading principle is functional restoration, not pain reduction. This Multidisciplinary Outpatient Care case management (MOC) programme consists of a *workplace intervention* - based on participatory ergonomics,[13-14] applied by occupational therapists (OT) - and *graded activity*,[15-16] applied by physical therapists, using cognitive behavioural principles (Table 1). The programme stops after establishing a lasting return (>4 weeks) to own or equal work. The development of the MOC programme, detailed information about the content of the MOC programme and the design of the *quantitative* RCT evaluating the MOC programme (cost-) effectiveness, compared with regular care - together called BRIDGE-study -, has been published elsewhere.[12]

The rationale behind these interventions is that research shows that long-term work disability is caused by personal patient characteristics and by interactions with the patient's environment (work(place) and health care system).[17] Workplace intervention is focused on the work system (worker, supervisor); graded activity is directed towards the patient's illness-related behaviour (pain cognitions, pain-coping). Moreover, the care manager coordinates the care, using a *protocolled communication process,* designed to prevent communication problems and to keep every stakeholder in- and outside the health care system involved and informed.

It aims at counteracting contradictory advises and supervisory (or subordinate) resistance, regarding workplace adaptations, and at coordination between different health care providers within and outside the programme, facilitating a multidisciplinary viewpoint and professionals' mutual agreement on treatment and RTW-goals.

Table 1. Explanation of the workplace intervention and graded activity.

Workplace intervention	**Worksite assessment**
Aim: Achieve consensus by all stakeholders about the adjustments for the workplace to facilitate RTW.	- Observation of the patient's workplace; - Patient and supervisor independently rank RTW obstacles; - Patient, supervisor and OT brainstorm and discuss possible solutions for the obstacles until reaching consensus.
Graded Activity	**Clinical intervention**
Aim: Restore patient's occupational function and supervise RTW.	- Baseline (three times) to test patient's functional capacity. - An individually graded exercise programme, teaching patients that, despite pain, moving is safe while increasing the activity level.

OT: occupational therapist

To date, quantitative research has frequently been done to evaluate the effectiveness of innovative LBP interventions.[17-21] Although some proved to be effective, they often remain unused. For successful implementation it is important to take notice of barriers and facilitators to change practice.[22-23] This can be investigated by quantitative research, focussing on known barriers and facilitators but also by qualitative research which aims at exploring, unravelling and showing unknown barriers and facilitators. In qualitative research it is essential to be open-minded which allows researchers to investigate a wider area, without initial preoccupation by specific theoretical constraints. Afterwards results of qualitative research can be placed in a theoretical framework which can used and tested in future quantitative research.

In this study we want to explore an important aspect of the working mechanism of the MOC programme. We want to know what is the mechanism behind a behaviour change from pain elimination behaviour to a functional behaviour. What factors make it that patients and their healthcare providers perceive the MOC as effective and be compliant to the program's principle?

Objective

To *qualitatively* explore how LBP patients and health care providers perceive the MOC programme effectiveness, and to reveal processes and factors, that could influence the programme implementation and effectiveness.

METHODS

Patients and health care providers were asked about their experiences with the MOC programme, using in-depth, semi-structured interview (patients) and multidisciplinary focus group (health care providers). Both interviews and focus group discussions were recorded, transformed into verbatim transcript and analysed by constant comparison method, while inter-subjective agreement was guarantied by presenting codes and quotations separately to co-examiners.
The medical Ethics Committees of the participating hospitals (VU University Medical Centre, Slotervaart Hospital, Amstelland hospital and OLVG, all based in Amsterdam, and the Spaarne Hospital in Hoofddorp) approved the study. All participating patients have signed an informed consent.

Patients
The source population consisted of chronic LBP patients (18-65 years) who visited an outpatient clinic of the participating hospitals and met the inclusion criteria (LBP lasting more than 12 weeks; paid work $\geq$8 hours/week (i.e. paid-employment or self-employed); (partially) sick leave). Excluded were patients with specific or a-specific LBP less than 12 weeks, with cardiovascular pathology, psychiatric pathology, juridical conflict at work and/or unable to complete questionnaires written in Dutch. Details on the recruitment procedure have been published elsewhere.[12]
Patients were randomly assigned to the experimental group, receiving the MOC programme, or to the control group, receiving regular care. Between January 2006 and February 2007 twenty nine 'MOC-patients' were interviewed by telephone for about 20-45 minutes, using a semi-structured interview schedule with topics such as sick leave, motivation, expectation, RTW and programme evaluation (graded activity; workplace intervention; care management, communication process). Nobody refused to be interviewed. The results are based on 20 interviews, since, during analyses, saturation was reached after 20 interviews. Of the patients whose interviews were used nine were male, eleven female, the average age was 46 years (range 29-60 years) and the mean sick leave duration 5.7 months (range 2-12 months).

Health care providers
The second study group - health care providers applying the MOC programme - was interviewed for two hours in two focus group meetings: one was held nine months after starting the programme implementation (one care manager, two occupational therapists, two physical therapists), the second seven months later (one care manager, one occupational therapist, four physical therapists, one medical specialist). All professionals had seen at least two participating patients. They were asked to bring forward and discuss their experiences with the programme and specific topics such as communication, perceived effectiveness and barriers/facilitators.

Analysis

The patient interviews and focus group meetings were recorded, transcribed and analyzed with *ATLAS.ti*. This software facilitates coding and analyzing of transcripts and can retrieve related segments and sub-themes. Data from both transcription sets were analyzed by using the constant comparison method.[24-25] First, fifteen patient interviews were analyzed to identify themes. Secondly, five additional interviews were held to explicitly search for new themes.[26-27] Since none were found, after 20 interviews saturation was reached and no further interviews needed. Finally, theoretical themes were related to themes found in the focus group data. Two co-examiners - directly respectively not-directly involved in the research project - tested the inter-subjective agreement, having to match quotations presented separately to them with codes and themes. Codes at least three times mentioned are reported here.

RESULTS

Perceived effectiveness

Perceived effectiveness is defined here as how participants and health care providers evaluated the programme to be effective for recovery and RTW. The programme was evaluated as an effective rehabilitation instrument for managing chronic LBP, because it promotes functionality and capability in the workplace (Table 2). Patients also report noticeable functional improvement and - although not the primary programme goal - reduction of physical complaints. However, when patients perceived the programme as ineffective, this made them feel quite desperate.

Compliance

Compliance is defined here as the extent to which patients and health care providers accept functional restoration and RTW as leading principles instead of pain reduction. Our findings show that patients understood this basic MOC goal - important for compliance (Table 2).

Nevertheless, compliance was influenced negatively, when participating patients with long medical histories - frequently visiting different professionals (manual therapists, physical therapists, chiropractors, osteopaths), without long-term functionally improvement - aimlessly entered the programme, failing to formulate clear expectations and motivations.

Table 2. Examples of illustrative interview quotes regarding effectiveness, compliance and applicability.

Perceived effectiveness 'The focus isn't on pain and the complaints that you experience (..). But again, the goal of the programme is function improvement, increasing strength et cetera. From that perspective it worked perfectly'. (male patient, age 42, marketing&sales official)
Compliance 'Well, I found Graded Activity very positive! Firstly, one dares to start living with a handicap – for a handicap it is! That one could do things I thought never to be able to do anymore. Sporting and being busy sometimes was hard, but then I did less, after consultation. I found that very nice!' (female patient, age 49, facilitating services)
Applicability 'It sometimes is difficult because you've had a wrong posture for about thirty years and then suddenly you have to use the right posture. These habits are hard to break but then you get the wake-up call and realize: "Hey, you've been sitting in the wrong way"'. (male patient, age 53, project manager)

Barriers and facilitators

The perceived programme effectiveness depends on perceived barriers/facilitators: programme aspects that participants see as making compliance and eventually effectiveness more difficult/easier.

Several barriers emerged, related to patients' personal characteristics - internal barriers - or to their environment, like the work(place) and health care system - external barriers (Table 3). Findings suggest that differences in perceived effectiveness by patients have to do with differences in perceived internal and external barriers and, consequently, in compliance to the programme.

Internal Barriers

Despair was found to be an important internal barrier. Patients with despair experience LBP problems as unsolvable and pain-oriented. They characterize themselves by externalizing their problems which, in turn, negatively influenced their compliance. These patients tended to perceive the programme as ineffective and, consequently, reported more and divergent barriers (e.g. graded activity being too short, painful and intensive). Compared with other patients, they tended to be more focused on pain reduction and consequently evaluated MOC as unsuccessful. Alternatives were not offered to them either.

External barriers

Four external barriers were found. First, lack of supervisory support: when there is supervisory non-participation in the workplace intervention and in fulfilling the agreed workplace adjustments, this does not facilitate RTW. Next, protocolled communication, designed to overcome communication problems, does the opposite, when problems represent a conflict, in which stakeholders have irreconcilable interests. A third external barrier concerns waiting periods in the health care system. E.g. joining the MOC programme needs approval of the patient's company doctor. Only then, the care manager can inform the occupational and physical therapist. So, starting depends on the accessibility of these health care providers. When waiting periods exceed one week (the protocol prescription), this has led to RTW delay and/or patients seeking other treatment.

Table 3. Examples of illustrative interview quotes regarding internal and external barriers

Internal barriers *Despair:* Running to doctors all the time, staying away from work and also entering the BRIDGE project, I went a bit crazy and was quite fed up with it (..). I think my LBP will not pass. Well, maybe after very difficult surgery. But even then I am not sure if it will work and whether I would still be able to walk after that (..). It is very tiresome, very hard'. (female patient, age 54, entrepreneur)
External barriers *Workplace system/no supervisory support:* 'No no! Because the three ergonomic solutions we agreed upon, none of it has been done and it never will be. (…) they do not want to take you seriously." (female patient, age 36, saleswoman)
Health care - communication problems '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 (...)' (care manager).
Health care - waiting period: 'I didn't receive a return call of the physical therapist, even though I did leave a message. Because I had to much pain, I made the decision to get a referral note for physiotherapy from the general practitioner myself (..)'. (female patient, age 47, kindergarten teacher)
*Health care – previous medicalisation: '*I quit the programme for a while (..) because I was in so much pain that I went back to being treated by my chiropractor. He said that I should stop with the programme. The programme was a negative influence on his treatment. (female patient, age 54, entrepreneur)

A final barrier – previous medicalisation: frequent, long during treatments - is closely related to compliance. Patients with long medical histories sometimes were unsure of what they could expect from the MOC programme. The regular LBP health care, primarily directed at pain reduction, doesn't encourage patients to be active in daily life, including work. MOC is directed at RTW and patient activeness. So patients can become entangled in a tug of war between regular health care and MOC-professionals, which consequently negatively influences compliance.

Facilitators

Facilitators help patients and health care providers to implement and finish the programme. Internal and external facilitators were identified (Table 4).

Table 4. Examples of illustrative interview quotes regarding facilitators

Internal facilitators *Motivation:* 'I think that my expectation of the Bridge project was fulfilled, but you have to support the idea of it and not 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'. (female patient, age 41, domestic service official)
External facilitators *Protocolled communication:* 'It is very useful when information is exchanged that only one of us has, for example information regarding the work adaptations, which is sent to the physiotherapist and I think it is very efficient to have an overview'. (occupational physician)
Information supply: 'When considering the MOC programme (..) I was motivated to continue the programme, because they explained everything carefully and assured me I wouldn't break anything'. (female patient, age 56, doctor's receptionist)
'Additional information from the care manager 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 the multidisciplinary aspect is it's selling point' (physical therapist).
Tailor-made exercises: 'I think the exercises are fine and when I asked how to do them they were further explained to me. And it seems the exercises makes you clear how to do things automatically, as you would do things in daily life'. (female patient, age 46, nurse)

Internal facilitators

Patient's disciplinary motivation - the inner drive to reach one's personal goal - positively influences compliance as it stimulates patients to be persistent in exercising. It also stimulates patients to focus on positive progress more than on negative experiences.

External facilitators

The protocolled communication appeared to stimulate *information exchange* among health care providers, and between them and their patients. This positively influences patient compliance, counteracts medicalisation and encompasses clear explanations, advice and goal setting, which could positively adjust a patient's former incompatible expectation and motivation regarding the programme. In general, patients evaluated the protocolled communication as positive, stimulating them to persevere and complete the MOC programme. The graded activity programme contains six fixed exercises and three *tailor-made exercises,* also identified as external facilitators, helping patients to apply MOC-principles like integrating new motor skills and movement techniques into daily life.

Applicability

Generally, patients evaluated the programme as quite applicable. Readjusting *unconscious* inadequate motor skills or movement techniques was not easy, but was facilitated by specific tailor-made exercises, selected during graded activity, to prevent structural wrong postures at work and by specific work adaptations selected by mutual agreement between patient and their supervisor. According to the patients, the selected solutions fitted easily into their function (Table 2).

The health care professionals were positive about the applicability of MOC as well. Especially, having the same vision about treatment goals and a fast way of communication was experienced as very positive. They commented however that, when there was no positive work relation between patients and their supervisor, the workplace intervention was hard to execute. Also the programme was difficult to apply, when patients with long-term work disability had different interest in participating, e.g. to show motivation for rehabilitation in order to continue their sickness benefit.

For self-employed participants executing the programme according to the treatment plan was difficult, when they returned to their work too fast, so by the end they were off work for a longer period than expected.

During the interviews also some suggestions were given to enhance the applicability, such as psychological treatment to change the goal setting for participants for whom MOC did not succeed, or mediation for participants whom supervisor had resistance to execute the workplace intervention.

DISCUSSION

In order to return chronic LBP patients from outpatient curative care back to work, an innovative patient-activating stepwise programme has been developed and implemented, aiming at functional restoration instead of pain reduction. It also promotes communication between health care providers, patients and other stakeholders involved (workplace), in order to coordinate patient advices. Health care providers and patients generally evaluated the perceived programme effectiveness as positive. However, when patients were primarily focused on pain reduction and overall had low expectations, this

negatively influenced their compliance, which resulted in patients perceiving the programme as ineffective, reporting divergent barriers.

Theoretical framework

As said before, in explorative qualitative research open-mindedness is essential, and it is not unusual to start without a fixed theoretical framework in advance, and to look how afterwards results can be placed in a theoretical framework. In this study compliance, influenced by barriers/facilitators, emerges as a central issue, related to perceived effectiveness and applicability of the MOC programme. These issues seem to fit well into Azjen's theory of planned behaviour (Figure 1).[28] In short, this model focuses on what factors would make a person adopt certain health behaviour (compliance). Perceived effectiveness can be seen as the desired outcome: a result of behavioural intentions, influenced by an objective context (workplace, health care system) and a subjective context (general attitudes and personality traits such as despair and disciplinary motivation).[29-30] Factors within the objective context negatively influencing compliance are lack of supervisory support (workplace) and waiting periods, communication problems and medicalisation (health care). Despair is found in the subjective context and related to general attitudes and personality traits that will negatively influence the patient's intent. Furthermore, an actual change in behaviour is also influenced by a patient's perception of control over that behaviour (self-efficacy).

Specific recommendations for programme improvements are related to perceptions of behavioural control, since compliance tended to be a decisive aspect for perceived effectiveness, negatively influenced by despair and the perceived difficulty of the programme's applicability.

Strengths and limitations

The first strength is the explorative qualitative design, providing deeper insight into mechanisms behind the programme than a quantitative study could do. The design also reflects a double perspective (patient and health care providers), which can lead to more detailed information and implementation suggestions. Finally, theoretical saturation guarantees that all important themes are included during analysis. Limitations were voluntary participation (less motivated potential participants did maybe not participate, making generalisation questionable, telephone interviews (non-verbal clues could not be noticed) and not interviewing other stakeholders like supervisors.

Finally, the short follow-up cannot give information on how many patients adhere to treatment recommendations over a longer period. Former studies show that insufficient compliance could be seen as the missing link regarding ineffectiveness of exercises during and beyond treatment.[31] It is therefore important to differentiate between non-compliance *during* treatment (short-term compliance) and *beyond* treatment (long-term compliance), since these require different compliance-enhancing strategies.[32]

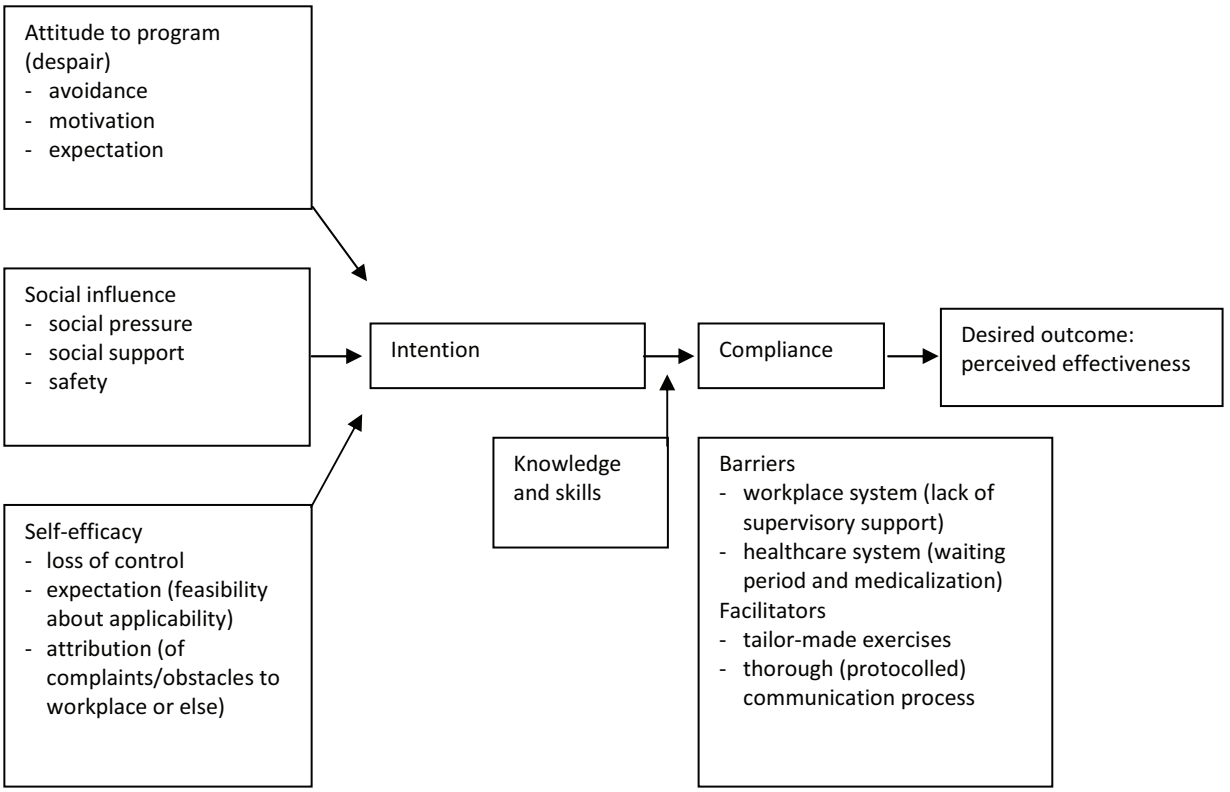

Figure 1. Theoretical framework based on the theory of planned behaviour by Azjen[28]

Policy implications

The positive programme evaluation by patients and health care providers is important, given the latitude of chronic LBP and the considerable number of patients ending up medicalised in outpatient care, with few attention to work-relatedness and RTW. Our findings correspond to findings that the medical system often encourages passivity, chronicity and powerlessness, and that regular LBP care is still focused on pain reduction and less on RTW and encouraging patient activities.[10] Moreover, the longer absent from work, the higher the chance of a status quo, more or less disease/illness-independent.[33] The MOC programme offers a way out of this 'dead-end-street' of only treating symptoms, not leading to RTW. If the results of the still proceeding quantitative study are also positive, then a larger programme implementation is worthwhile, incorporating improvement suggestions given during this qualitative study. For patients persisting in their negative view it seems worthwhile to explore how their goal setting can be changed. Do they have identifiable features (sick leave duration, number/kind of treatments, medicalisation degree, personal characteristics) and can they be offered alternative treatment, more tailor-made, with psychological aid, to help them adopt the programme principle?

CONCLUSIONS

This qualitative study shows that, although patients' expectations were low at the program start, and despite long LBP histories, including many different therapies, (primarily) directed at pain reduction, the MOC programme was successful in changing LBP-patients' goal setting from pain elimination towards function restore and RTW. The programme was therefore perceived as applicable and effective, both by patients and health care professionals. However, the opposite was also found: patients unable to overcome barriers, persisting in their negative judgment. For them alternatives should be explored, aiming at identified barriers to change their goal setting.
Although final conclusions must wait for the RCT results of the programme (cost)effectiveness, thus far MOC seems promising for broader application. After incorporating improvement suggestions, new hypotheses can be tested about new interventions/implementations, directed at offering LBP patients new perspectives to continue or resume work.

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