

Chapter 1

General introduction

Case

A 42-year old male teacher working with teenagers has a history of recurrent low back pain. Since 5 years, the teacher has, on and off, pain in the lower region of his back with radiation till his upper left leg and limited flexion and rotation of the back. Activities like standing, bending, sitting and lifting are extremely painful during a period of exacerbations. During an exacerbation the teacher is sick-listed for many weeks. His employer is not pleased with the situation but does not know what to do. The occupational physician who is responsible for the re-integration of the teacher tried several therapies, but none of them had the desired result.

This time, the teacher has become frustrated and has experienced his complaints as unsolvable. In the past years, none of the treatments had decreased the pain complaints and every time new advices were given. The teacher does not want pain medication or a referral to a allied health care therapist. He wants to be referred to a neurologist to examine the origin of his pain. Therefore, the teacher is visiting his general practitioner. The medical diagnosis of the general practitioner remains, after taking of the case history and physical examination, lumbar disc displacement without radiculopathy. In the past years, the general practitioner has treated patients with such complaints according to the clinical guideline for general practitioners. However, none of the curative treatments helped the patient to relieve and cope with his pain. The general practitioner understands the situation of the teacher and agrees with a referral to a neurologist, since the patient is not responding to conservative treatment. The neurologist examines the patient and based on the examination a magnetic resonance imaging (MRI) is executed to exclude other specific back pain problems and to investigate if there is an indication for surgical treatment. The MRI did not show any structural deformities that may be an indication for surgical treatment. Further treatment by a medical specialist is not indicated. The neurologist refers the patient back to his general practitioner and advises the patient to stay active and to accept the situation. The neurologist wonders if there is a better treatment option for this patient. He would appreciate to discuss the situation with other physicians and therapists to look for one common treatment and goal.

Low back pain is a major health problem, can be disabling, and imposes an enormous social and economic burden on society.¹ It is estimated that half of the European population will suffer back pain at some time in their lives and at this moment a third of the European workforce suffers from low back pain.² A review of cost of illness studies of low back pain showed that costs due to back pain ranged from €116 per capita in Belgium to €399 per capita in The Netherlands.³ The largest contributor to these costs of low back pain was the indirect costs like production losses and disability pensions. Research showed that costs due to back pain were generated by only a small group whose condition is chronic – if pain lasts for more than 12 weeks – or recurrent – if there are several episodes of pain in 1 year lasting less than 6 months. This small group generated most of the health care costs and accounted for most of the cost of production losses and disability.⁴

There is increasing evidence that the longer the sick leave, the more difficult it is for a person to return to work and the higher the economic cost for society.⁵ In general, the prognosis for return to work is good.⁶ Duration of sick leave is often for a short period of time, about 75% of people who are on sick leave due to low back pain return to work within 1 month.⁷ A small percentage will be still off work after 6 months.⁸

Although there is a lot of evidence that a disability prevention management model of back pain, the Sherbrooke model directed at both the worker and the jobsite, has proven to be cost-effective for subacute low back pain⁹, there is general understanding that there is little evidence about “successful” return to work processes and practices for persons absent from work due to chronic low back pain. Due to the absence of such evidence there is a need to develop cost-effective interventions aimed at return to work for sick-listed persons with chronic low back pain. Introducing new care will arise several questions from health care providers (like general practitioners, medical doctors, occupational physicians and physical therapists), employers, employees/patients, researchers and policymakers. The next chapters of this thesis will address their following questions.

Questions asked:

Policymakers ask themselves the question: ‘What are the costs for Dutch society for taking care of patients with back pain nowadays?’

The total annual costs of low back pain to Dutch society were estimated to be € 4.2 billion per year in 1991. These expenses equaled 1.7% of the Gross National Product and were primarily related to indirect costs like productivity losses and disability (93%).¹⁰ Direct health care costs were much lower, only 7%. In the last decades, new laws have been introduced, guidelines for health care professionals have been published and also treatment of back pain has been developed.¹¹⁻¹⁴ A result of these changes could be that the absolute, as well as the relative costs of back pain of 1991 are not up to date anymore. Therefore, we will investigate if the above mentioned changes have influenced the total burden of back pain on Dutch society over time. Chapter two describes how we assessed the burden of back pain and gives an overview of costs for Dutch society in the period of 2002 to 2007.

Researchers ask themselves the question: ‘What are important aspects in the design of an innovative care for sick-listed patients due to chronic low back pain?’

During the past decade, many studies have shown that work disability is a complex problem because it is multifactorial and because multiple players like the worker/patient, the employer, the healthcare provider, and the insurer are involved.^{5;15;16} Loisel et al. proposed a model, the arena of work disability, describing the actors in the disability process and their position in the system (health care system, workplace system, personnel system, and compensation system) (Figure 1).¹⁶ It shows the diverse players in the system surround the worker who is also one of the players, all of whom fall under a specific legal and cultural system. Also, the process of return to work following ill-health

has a multifactorial nature, including complex interactions between (1) biological (i.e. disease), psychological (i.e. fear avoidance behaviour), and social factors (i.e. work demands, family support) as well as (2) different “systems” as described in the arena of work disability.¹⁶⁻¹⁸ It is a challenge to bring all the relevant societal players together for the prevention of disability because each of the stakeholders has different interests and values.^{5;19} The worker wants to minimize disability and pain, the employer wants to minimize disruption in production, health care providers want to cure the pain condition and the health care insurer who is liable for the health care costs and the employer/income insurer/ workers compensation board who is liable for compensation benefits wants to return workers back to work in order to end compensation.

The multiple players involved in the return to work process often result in disorganisation of care and the return to work process. To overcome this problem, the health services model of transmural care can be used. The main feature of this model is that patients are offered varies treatments during an episode of back pain and absence from work, but only one of the health care professionals is primarily responsible for the return to work process.²⁰

We developed integrated care which is a combination of the Sherbrooke model and the health services model of transmural care. Integrated care can be describes as: the integration of curative medicine and occupational medicine in which two interventions are provided: a graded activity program and a work(place) intervention.

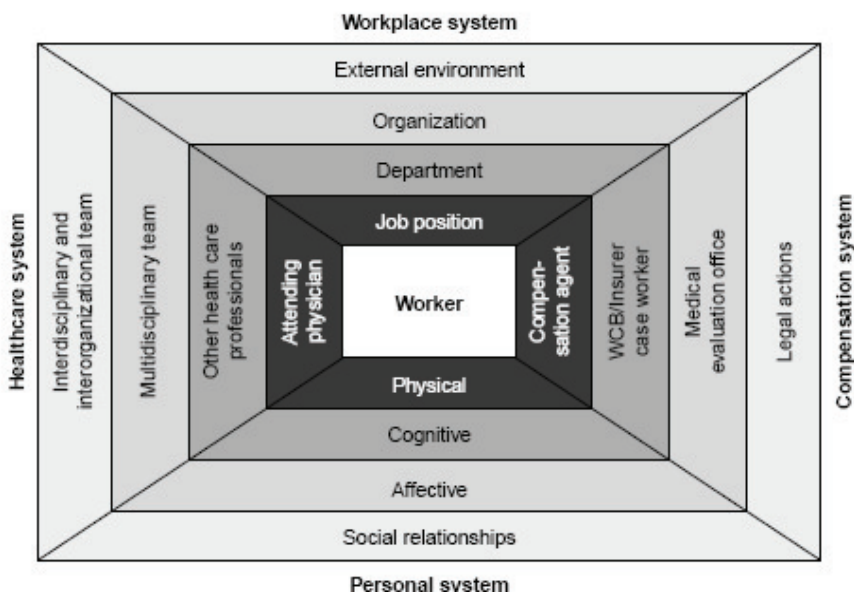


Figure 1. The arena in work disability prevention as conceived by Loisel et al. (2001)¹⁶

The graded activity program is based on bio-psycho-social principles, with the main objective of the program to restore the daily functioning of participants for the longer term.²¹ The work(place) intervention is based on participatory ergonomics, with the main objective to encourage the stakeholders to reduce barriers for return to work at the workplace.²² Integrated care implies the transdisciplinary and transmural cooperation of several disciplines in primary and outpatient care, in which a clinical occupational physician is primarily responsible for and coordinates the return to work process in cooperation with other health care professionals. Chapter 3 describes the BRIDGE study in which a new care is compared to usual care for sick-listed patients due to chronic low back pain.

Patients ask themselves the question: ‘Does this integrated care help me to cope with my back pain?’ Health care providers ask themselves the question: ‘Can this new care help patients with chronic low back pain to shift from pain oriented behavior to function restore at work?’

For patients with back pain, pain relief is the driving force for seeking treatment.²³ On the other hand, chronic patients who have gone through many experiences with the healthcare system do not expect anymore that medical interventions will alleviate their symptoms.²⁴ A review revealed that there is a gap between what is offered by healthcare providers and what is expected by patients.²⁵ This aspect is very important to investigate. Due to dissatisfaction with pain relief, patients often assess a treatment as ineffective, while the treatment goals were achieved.²⁶ This gap can be explored by executing qualitative research in which interviews are used. These interviews will provide deeper insight into the mechanism behind the care given. It can help to explore, unravel and show unknown barriers and facilitators for implementation of a cognitive behavioral and problem solving approach at the workplace. Qualitative research findings can be used to either refine components of the new care or to tailor care procedures towards local circumstances of care practise.²⁷ Chapter 4 presents the results of a qualitative study focusing on how patients with chronic low back pain had experienced the new integrated care. Experiences were explored by addressing themes like perceived effectiveness, compliance, barriers, facilitators and applicability.

Health care providers ask themselves the question: ‘What is the applicability and acceptability of integrated care into daily practice?’

To implement a new intervention it is important to obtain insight into whether the treatment is feasible in daily practice. A process evaluation is useful to provide this information. It can reveal barriers and facilitators for implementation in daily care. These barriers and facilitators can be found at four levels.^{28,29} First level is the patient. What is the attitude of patients towards this new care? Do patients comply? Second level is the professional. What are future health care professionals’ experiences, adherence, beliefs and attitudes towards the intervention? Third level is the characteristics of the innovation itself. Is this new intervention time-consuming?; is this new intervention

compatible with existing work procedures of the professionals? Fourth level is the organization and the environment in which the innovation is implemented. Are there financial arrangements for reimbursement of this new care and are there sufficient resources to execute it?

Chapter 5 comprises a description of the feasibility of the integrated care program executed in a quantitative manner. The reach, the implementation, the satisfaction and expectations of all stakeholders, and the intention to use the integrated care program in the future are described.

Health care providers and employers ask themselves the question: 'Should a patient with chronic low back pain be referred to integrated care or to usual care to prevent (work) disability? Policy makers ask themselves the question: 'Does this integrated care prevent permanent disability for patients with chronic low back pain?'

A review reporting on 27 studies which estimated cost of low back pain in various countries concluded that the greatest cost savings from societal perspective may be obtained from interventions that promote early return to work and minimize lost productivity.³ The recommendation was therefore that interventions for low back pain have to focus on outcomes like return to work or productivity loss and not on clinical outcomes like pain reduction. Research has shown that interventions which incorporated a workplace and a clinical intervention, for employees with (sub-) acute low back pain were successful in re-integration of employees into their jobs and reduced sick leave significantly.^{30,31} These interventions were focussed on employees with sub-acute non-specific low back pain who were on sick leave for a maximum of 6 weeks. Characteristics of patients with (sub-) acute low back pain and short work absenteeism and the management of these patients differ from patients with chronic low back pain and long work disability.³² Therefore, it is interesting to investigate whether the promising results of occupational interventions in primary care can be repeated in patients who have long work absenteeism duration Results are shown in chapter 6.

Policymakers ask themselves: 'Is integrated care cost-effective compared to usual care?'

Ever increasing healthcare expenditures necessitate not only policymakers, but also healthcare providers, health insurance companies and patients to make choices in healthcare. In an economic evaluation, both the costs and consequences of two or more interventions are compared.³³ The evaluation is aimed at answering the question if an intervention is worth doing compared to other strategies that could be performed within a certain budget. Economic evaluations may help to identify 'value for money' interventions. An economic evaluation can assess how the costs for society are distributed over the direct medical costs and the indirect costs caused by productivity loss and disability. A recent review on disability management evaluations concluded that only few intervention studies undertook economic analyses and for those that did, the quality was generally quite low. A recommendation for future studies was to evaluate

from a societal perspective.³⁴ Chapter 7 will present the results of an economic evaluation of the integrated care program from a societal perspective. Finally, chapter 8 presents the general discussion of this thesis. In this chapter, the main research findings, methodological considerations, a context analysis and recommendations for future research and practice are discussed.

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