

Low back pain is a major public and occupational health problem, which is associated with very high burden to patients and society. Occupational interventions have proven to be (cost-)effective for the return to work of patients with sub-acute low back pain in primary care. Effective interventions for patients with (sub)acute low back pain does not guaranty to be effective for another target group. The effectiveness of such an intervention has not been established yet for patients with chronic non-specific and specific low back pain in an outpatient curative care setting. Therefore, this thesis focused on the BRIDGE study, a randomized controlled trial in which a new care (integrated care) for patients sick-listed because of chronic low back pain is compared to usual care. In chapter 1, questions were raised by stakeholders concerning the introduction of new care. Answers to these questions are summarized below.

What are important aspects in the design of an innovative care for sick-listed patients due to chronic low back pain?

A randomized controlled trial, the BRIDGE study, was set up to evaluate the (cost-) effectiveness of integrated care compared to usual care for sick-listed patients with chronic low back pain. The integrated care program consisted of a workplace intervention based on participatory ergonomics, and a graded activity program using cognitive behavioural principles. A team consisting of a clinical occupational physician, a medical specialist, an occupational therapist and a physical therapist provided the integrated care. The clinical occupational physician was responsible for the planning and the co-ordination of the care, and for communication with the other health care professionals in the team. Usual care was provided by general practitioners and occupational physicians according to Dutch guidelines. The primary outcome of this study was lasting return to work, defined as the duration of sick leave due to back pain in calendar days from the day of randomization until full return to work in own or other work with equal earnings, for at least 4 weeks without (partial or full) recurrence. Sickness absence data reported by the patients were collected every month by means of a diary and after 12 months from the database of the occupational health services. Secondary outcome measures were pain intensity, functional status, and quality of life. These outcome measures were assessed before randomization and 3, 6, and 12 months later. (Chapter 3)

Does this integrated care help patients to cope with their back pain? And can this new care help patients with chronic low back pain to shift from pain oriented behavior to function restore at work?'

To answer this question, a qualitative study in which sick-listed patients with chronic low back pain who were allocated to the integrated care group were included. In total 29 in-depth, semi-structured interviews were held. The results of the interviews showed that although patients' expectations were low at the start of the program, and despite long low back pain histories, including many different therapies, (primarily) directed at pain reduction, the integrated care program was successful in changing patients' goal setting from pain oriented towards function restore and return to work. Patient's compliance was influenced by facilitators like disciplinary motivation, protocolled communication, information supply, tailor-made exercises. Patient reported barriers like despair, supervisory and subordinate resistance at work, waiting period, medicalisation in health care. Generally, patients perceived integrated care as applicable and effective.

What is the applicability and acceptability of integrated care into daily practice?'

In a feasibility study, the experiences of the first 40 eligible patients allocated to integrated care were investigated. Of those 40 patients, 37 patients, their supervisors and the health care professionals actually participated in the intervention. Results show that adherence to the integrated care program was in accordance with the protocol. Patients, their supervisors and the health care professionals were (very) satisfied with the program. Patients rated their treatment on average with a 8.1 on a 10-point scale. The workplace intervention showed that most barriers for return to work were related to physical workload (36.4%) and work design (25.5%). Most of the solutions for these barriers (72%) could be realized in the short-term (within 3 months). Graded activity showed that the three individually chosen exercises related to problems in the work situation mainly concerned sitting (23%), lifting (21%) and standing (15%). The exercise goals set in the graded activity treatment plan were achieved in 77% of the patients. According to the health care professionals, the role of the clinical occupational physician was of additional value in the return to work process. Besides, the health care professionals stated that motivation of the patients for return to work, the commitment, and the compliance of the patients and trust of the patient in their supervisor were the most important factors positively related to the process of the care. The factors negatively related to the process of the care, according to the health care professionals, were lack of commitment of the patient supervisor, reduced physical capacity of the patient, and the duration of the care. The only barrier for implementation reported by the multidisciplinary team was time investment. These results indicate a high feasibility for a broad

implementation of integrated care for sick-listed patients with chronic low back pain. For future use, it is recommended to reconsider the time-investment aspect mentioned by the multidisciplinary team. (Chapter 5)

Should a patient with chronic low back pain be referred to integrated care or to usual care to prevent (work) disability? And does this integrated care prevent permanent disability for patients with chronic low back pain?’

The effect evaluation of the integrated care program compared with usual care showed that patients in the integrated care program (N=66) substantially reduced disability due to chronic low back pain in private and working life compared to usual care (N=68). The median duration until sustainable return to work was 88 days in the integrated care group and 208 days in the usual care group ($p=0.003$). After 12 months, patients in the integrated care group also improved significantly more on functional status compared to patients in the usual care group ($p=0.01$). No statistically significant differences in pain improvement were found between the two groups. The conclusion can be made that application of this program directed to both the patient and the work environment will have major impact on the individual and societal burden of low back pain. (Chapter 6)

General discussion

In the last chapter of this thesis, the findings of this thesis are discussed with regard to current evidence. Furthermore, methodological characteristics of the study and implications for implementation are discussed and finally recommendations for practice and policy and new research to be conducted are given. Main conclusions of this thesis are: 1. The economic impact of back pain is still enormous and is mostly due to costs of work absenteeism and disability; 2. Integrated care is a preferred method for the rehabilitation of sick-listed patients with chronic low back pain. Our main recommendations for practice and policy are: 1. health care providers should change their goal setting from curative treatment to guidance of their patients in their return to work process; 2. patients with prolonged work disability due to chronic low back pain should have more focus on function restore instead of pain reduction; and 3. education courses should be generated in which health care professionals can be trained in the components of the integrated care program (work(place) intervention and clinical management intervention).