

Chapter 2

Trend in societal costs of low back pain in The Netherlands in the period 2002 - 2007

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in The Netherlands in the period 2002-2007.

ABSTRACT

Study design: cost of illness study

Objective: To investigate the total costs of back pain in The Netherlands over the years 2002 to 2007.

Summary of background data: In 1991, the cost of back pain to Dutch society was estimated at € 4.2 billion. In the last two decades, new laws regarding health insurance and sickness benefits and new guidelines for health care professionals have been introduced and may have affected the societal costs of back pain in The Netherlands.

Methods: We conducted a cost of illness study in which we gathered relevant available data from national registries, reports of research institutes, descriptive studies and occupational health care authorities to estimate the total cost of back pain to Dutch society for the years 2002 to 2007.

Results: The total costs of back pain decreased from € 4.3 billion in 2002 to € 3.5 billion in 2007. The share of these costs was about 0.9% of the GNP in 2002 and 0.6% of GNP in 2007. The ratio between direct and indirect costs did not change noticeably over the years; i.e. 12% for direct and 88% for indirect costs.

Conclusions: The total societal costs of back pain have decreased since 1991, and also between 2002 and 2007. Although Dutch policy interventions to lower the indirect costs seem to be successful in the last decades, costs of back pain are still substantial and indirect costs represent the majority of these costs. Policy interventions and implementation of cost-effective interventions focussing on return to work management for back pain in health care is important to further decrease the economic burden of back pain to society.

INTRODUCTION

Back pain is a major health and economic problem for society. In Western countries, reported point prevalence varies from 12% to 30%.¹ On the basis of only demographic developments, the expectation is that the absolute number of persons with back problems will increase with 7% between 2005 and 2025.¹² The impact of back pain on society can be estimated by examining the costs. A recent review of cost of illness studies showed that costs due to back pain ranged from €116 per capita in Belgium to €209 per capita in Sweden.⁶ But also outside Europe low back pain is a massive health problem with a significant economic burden. In the United States, approximately one quarter of adults reported low back pain lasting at least 1 whole day in the past 3 months.⁷ In Australia, total cost of low back pain was estimated AU\$9.17 billion which was AU \$474 per capita.³⁶ In 1991, the financial burden of back pain to Dutch society was assessed to be US \$4.6 billion equating to US \$307 per capita.³¹ Comparable to other countries most of these costs were related to production losses or disability.⁶ Since 1991, many changes have been made in the social security system as well as in the health care system in The Netherlands. For the social security system, new laws have been introduced in The Netherlands like in most industrialized countries in the world aiming to reduce the number of persons receiving a sickness benefit or disability pension.^{1,19} The health care system has also changed in recent years. First of all, the health care insurance system was transformed in 2006 because of the increasing demand on health care. This revision included a change in reimbursement of interventions within the Dutch public health insurance system. Second, evidence-based medicine has become the new paradigm and within this framework clinical and primary care practice guidelines for low back pain have emerged aiming to achieve effective and efficient patient care.^{2,4,33} The first Dutch back pain guideline for general practitioners was published in 1996 and several others have been published and updated since. Third, numerous interventions for treating back complaints have emerged. Fourth, registries of health care use were introduced for example a database to register the care given by general practitioners (since 1991) and allied health care professionals (since 2001).

It should be questioned if the reported costs of back pain of 1991 are still representative. Therefore, in this study we reassessed the financial burden of back pain to Dutch society and the configuration of the different costs. This cost of illness study can indicate the potential scope in the financial burden of back pain and can help in re-setting the main targets of health research and policy measures.

METHODS

Cost of illness

In this study we used the societal perspective to estimate the total costs related to back pain in The Netherlands yearly, for the years 2002 to 2007. These years were studied because relevant data were not available before 2002 and after 2007. The costs are

presented in Euros and cost indexation was used for each year, with 2000 as the base year. The extrapolation of the costs to Dutch society is described in Appendix 1.

Data Sources

To identify all costs due to back pain in The Netherlands, we searched for data in national registries^{13,18,24,25,34}, reports of research institutes²⁸, descriptive studies^{3,32} and occupational health care authorities (Table 1). Previous research has shown that these sources are representative for the Dutch population and that their reliability is good.^{22,29} The data sources used in this study have used several classification systems. To make data comparable we selected from the different classification systems all diagnosis codes related to back pain (Table 2).

Direct costs

Direct costs can be divided in direct medical and direct non-medical costs. Direct medical costs comprised hospital care cost, medication, general practitioner costs, allied health care costs and home care costs. As there is no registration available for the use of home care, these costs were not included in the study.

Direct non-medical costs are those costs related to goods and services consumed directly because of the illness, but which are not considered to be health care related. They include, for example, travel costs to attend health care professionals, but also alternative medicine and informal help. Since there is no registration available covering direct non-medical costs, these costs were not included.

Hospital care costs

Hospital care includes inpatient care, outpatient care, medical procedures, and diagnostic tests. To estimate the volume of hospital care we used the National Medical Registration of Dutch hospitals (LMR)²⁵, the Netherlands Information Network of General Practice (LINH)³⁴, the Dutch national surveys of general practice (DNSGP)³ and a descriptive study of health care utilization of Dutch patients with back pain.³² To determine the costs we used the standard costs according to the Dutch Manual for Costing and the tariffs set by National Health tariffs Authority (See Table 1).

Inpatient care

In The Netherlands we have academic hospitals and general hospitals. The LMR showed that 10% of all inpatient care takes place in an academic hospital and 90% in a general hospital. The assumption was made that there was no difference in the relative number of patients with back pain visiting the hospitals. The costs of care in an academic hospital are higher compared with a general hospital. The costs of inpatient care were estimated by multiplying the total number of days of inpatient and care with the relevant cost prices taking into account the ratio between both categories of hospitals.

Outpatient care

No national database includes outpatient consultations. To approximate the number of outpatient consultations we used the data source LMR for the number of medical procedures. The assumption was made that on average, patients were seen twice by their medical specialist.²⁸ The database of an academic hospital located in Amsterdam, which registers all treatment in that hospital, showed that 10% to 25% of patients, who consulted an outpatient clinic, were treated with a medical procedure. Being conservative, we multiplied the number of medical procedures with four to obtain the number of outpatient consultations. The costs of outpatient consultation were estimated by multiplication of the number of outpatient consultations by the tariff of a medical specialist.

Medical procedure costs

The LMR registers the number of medical procedures performed in all Dutch hospitals. These procedures are categorized in twelve main operation categories for examples laminectomy and spondylodesis. The costs of medical procedures by medical specialists were estimated by multiplying the total number of medical procedures for back pain performed in the Dutch hospitals with the relevant tariffs. The tariffs used included the tariff for the medical procedure, for medical specialist and for anaesthesiology.

Diagnostic test costs

Because of lack of a central register, medical examinations costs could not be assessed directly. Based on a descriptive study,³² we calculated that of patients visiting their general practitioner 6% was referred for an X-ray, 1.2% for magnetic resonance imaging, 1.2% for computed tomography, and for 1.7% of the patients a laboratory test was carried out. We used the data of LINH to estimate the number of visits to a general practitioner by patients with back pain and extrapolated these visits to the Dutch population. To determine the cost of medical examinations we multiplied the total number of medical examinations with the relevant cost prices of the examinations.

Drug costs

Drug costs related to back pain consist of prescribed medication and out-of-pocket medication. No data are available for out-of-pocket medication. Consequently, the latter costs are not included. To estimate costs of prescribed medication, we combined the data sources DNSGP and LINH. LINH registers the number of prescriptions due to back pain provided by general practitioners per 1,000 Dutch inhabitants. The number of prescriptions was extrapolated to the Dutch population (See Appendix 1). The DNSGP reported that distribution of prescription for back pain is mostly nonsteroidal anti-inflammatory drugs (i.e. diclofenac and ibuprofen) (30.1%), followed by benzodiazepine (5.8%), paracetamol (5.8%) and opioids (i.e. tramadol) (4.7%). We estimated the volume of drug use by multiplying the number of prescriptions extrapolated to the Dutch population which were extracted from LINH by the percentage of the different category of

Table 1. Registration authorities of which data were obtained with the used codes

Cost categories	Data sources	Details
Direct costs		
Hospital care	National Medical Registration (LMR) ¹⁴	LMR is a National Medical Register which holds longitudinal data on inpatient days of care, outpatient days of care and medical procedures and covers almost a 100% of the Dutch hospitals since 1964. The data are registered according the ICD-9.
	Report of Struijs et al. 2004 ¹⁶	This report focuses on the health care utilization of chronically ill people by linking data on referrals by general practitioners (LINH) with data on hospital utilisation in The Netherlands (LMR).
	Classification of Procedures (CvV) ¹³	CvV is used in hospital setting classify diagnostic, operative and therapeutic procedures. The database registers on a national basis. The data are registered according the classification ICD-9.
General practice	Netherlands Information Network of General Practice (LINH) ¹⁵	LINH is the Netherlands Information Network of General Practice. A database holds longitudinal data on consultations, morbidity, prescribing and referrals of about 340.000 individuals since 1991. The data are registered according the ICPC.
	Dutch national survey of general practice (DNSGP) ¹⁷	The DNSGP survey includes a detailed study on health and health care of approximately 400,000 patients registered in 104 general practices including 195 general practitioners. This study was carried out in 2000-2002.
Allied health care	National Information Service for Allied Health Care (LiPZ) ¹²	LiPZ is a nationwide representative automated recording network of physical therapists, Mensendieck and Cesar therapists in which ongoing care-related data are collected since 2001. This service collects computerised data on a continuous basis. The ICPC was used to classify the data.
	Report of Tulder et al. 1998 ¹⁸	Prospective descriptive study involving 26 general practitioners and 524 patients with chronic low back pain. It described the health care utilization in The Netherlands in the period 1993-1995. Health care problems were classified according to the ICPC.
Indirect costs		
Production losses	Occupational Health Service (ArboNed)	ArboNed holds longitudinal diagnosis-specific sick leave data. ArboNed represents about 15% of the Dutch population. They use CAS to classify the sick leave.
Disability	National Institute for Social Security (UWV)	UWV is the National Institute for Social Security and covers the registration of diagnosis-specific disability data for 100%. The used classification system was CAS.
	Statistics Netherlands (CBS) ¹¹	CBS is the largest provider of reliable on socio-economic data, which is representative for the total Dutch population.
Tariffs		
	Report of Oostenbrink et al. 2004 ³³	This report is a manual which describes the method to calculate standard costs in direct and indirect care. Costs presented in the manual are for the years 2002 and 2003.
	CTG (Centraal Tarieven Gezondheidszorg)	CTG is the National Health tariffs Authority that declares all tariffs within the health care sector for the Netherlands.
	Z-index ²¹	Z-index is a company that since 1999 collects data of all products which can be obtained at a public pharmacy.

prescription reported in DNSGP. The drug costs were calculated by multiplying the volume of drug use by the cost price of each prescription.³⁸ The volume of drug use was estimated under the assumption that the daily dosage of every medication was 4 multiplied by the number of days of drug intake which was assumed to be 14.⁵

General practice costs

Since general practitioner visits were not nationally registered we used the LINH network, which is representative for the Dutch population. LINH documents the total number of visits due to back pain per 1,000 Dutch inhabitants. To calculate the visits to a general practitioner for the Dutch society, we extrapolated the visits due to back pain by multiplying the number of visits documented in the LINH related to general practice we multiplied the total number of visits due to back pain by the standard cost price for a visit to a general practitioner.

Table 2. The used codes for back pain of each classification system

Classification system	Used codes for back pain
International Classification of Primary Care (ICPC) ³⁴	L01-03, L70, L83-L86, L88, L94, L99
International Classification of Diseases (ICD-9 codes) ³⁵	720-724
Classification for Occupational and Social Insurance (CAS) ³⁶	L100-105, L600-602, L609-613, L619-622, L624-625, L629
Classification of Procedures (CVV) ¹³	5030 – 5039, 5803, 5810

Allied health care costs

Physical therapy, exercise therapy (Cesar/Mensendieck) and manual therapy are the most commonly used types of allied health care for back pain in The Netherlands.³² Due to lack of a central register for allied health care, we used the data source National Information Service for Allied Health Care (LIPZ). LIPZ exists since 2001 and registers information of physical and exercise therapy. Data before 2003 are less accurate. We assumed that allied health care in 2002 was comparable with 2003. To estimate the volume of allied health care in The Netherlands, we multiplied the average number of treatments per LIPZ-practice with the total number of practises in The Netherlands. (See Appendix 1). The costs of physical therapy and exercise therapy for back pain were estimated by multiplying the number of treatments with the standard cost price. To estimate the costs related to manual therapy treatment we used the data of LINH and the standard cost price for a manual therapy consultation. We made the assumption that of patients with back pain who were referred by their general practitioner, 15% was referred to a manual therapist.³² Another assumption made was that the average number of manual therapy treatment sessions for back pain is three visits.

Indirect costs

Production losses and costs related to society due to morbidity and mortality are considered indirect costs of disease.¹⁴ Due to the negligible risk of mortality of back pain, the costs of mortality were not estimated. In The Netherlands, an extensive social

insurance system exists to provide economic support to workers in the case of sickness or disability. In case of sickness, the standard sickness benefits take the form of sick pay administered by the employer. The sickness benefit is provided during the first 52 weeks of illness. From January 2004, this wage payment period was prolonged to 104 weeks. Under Dutch law, the level of sick pay is at least 70% of the given worker's salary, and is at least the social minimum. In practice, most employer pay 100% of worker's salary. Workers can apply for a disability pension covered by the Employee Disability Insurance Act when the sickness absence period endures the given period.

Production losses costs

Costs of production losses due to sick leave from low back pain were calculated using the Human Capital Approach. Total costs of disablement were estimated by multiplying the net number of days of work disability due of back pain with the mean daily wages per person, taking into account sex and age. To estimate the costs related to production losses due to back pain we used the data of one Dutch occupational health service (ArboNed). ArboNed covers about 15% of the Dutch working population. To present the production loss for Dutch society, we extrapolated the total days of disablement by 100/15. The assumption was made that absenteeism among self-employed is equal to absenteeism among employed people.

Disability costs

Costs for disability pensions were obtained from UWV, the Dutch Social Security Agency. The UWV registers all diagnosis-specific disability data and their payments under the disability insurance act on a national basis. There are disability pensions for employed workers, self-employed workers and people under 18 years who are disabled. Besides, there is a group of people (9.4% of the Dutch working population) who do not receive employer-paid sick pay for two years prior to being granted a disability benefit. This group includes people on temporary contracts who lost their job during the two years. The UWV has the same responsibility for these workers as employers have for their employees. Costs for this group were also included.

RESULTS

Total costs for the Dutch society due to back pain were calculated yearly, for the period 2002 to 2007. The annual costs per cost category are presented in Table 3 for the years 2002-2007. Figure 1 gives an impression of the distribution of the direct and the indirect costs for back pain. To give insight into the estimation of these costs, we here present the results of the year 2007.

Table 3. Annual Dutch society costs (million €) due to back pain in millions Euros

	2002	2003	2004	2005	2006	2007
Direct costs						
Inpatient care	68	68	73	74	75	78
Outpatient care	4	4	5	5	4	4
Medical procedures	19	21	23	23	23	23
Diagnostic tests	4	4	4	4	3	3
Drug	17	19	17	18	18	21
General practice	58	59	61	61	110	113
Allied health care	283	283	250	236	246	232
Indirect costs						
Production losses	2,267	2,221	2,257	2,052	1,800	1,699
Disability	1,561	1,567	1,507	1,431	1,348	1,361
Total costs	4,281	4,246	4,197	3,904	3,627	3,534

Direct costs**Hospital care costs***Inpatient care*

The total number of inpatient days was 221,810 days. In 2007, the cost price for one day care in an academic hospital was € 476 and € 337 in a general hospital. Total costs for back pain for inpatient care were estimated at € 78 million in 2007 (2.2% of the total costs of back pain).

Outpatient care

The number of medical procedures for back pain was 30,964 in 2007. With the assumptions that every patient will have two outpatient consultations per medical procedure and that only 25% of the patients visiting an outpatient clinic would have a medical procedure, the total number of outpatient consultations was estimated 247,712. Multiplied by the mean fee per consult of € 18 in 2007, total cost for ambulatory hospital care was estimated at € 4 million in 2007 (0.1% of the total costs of back pain).

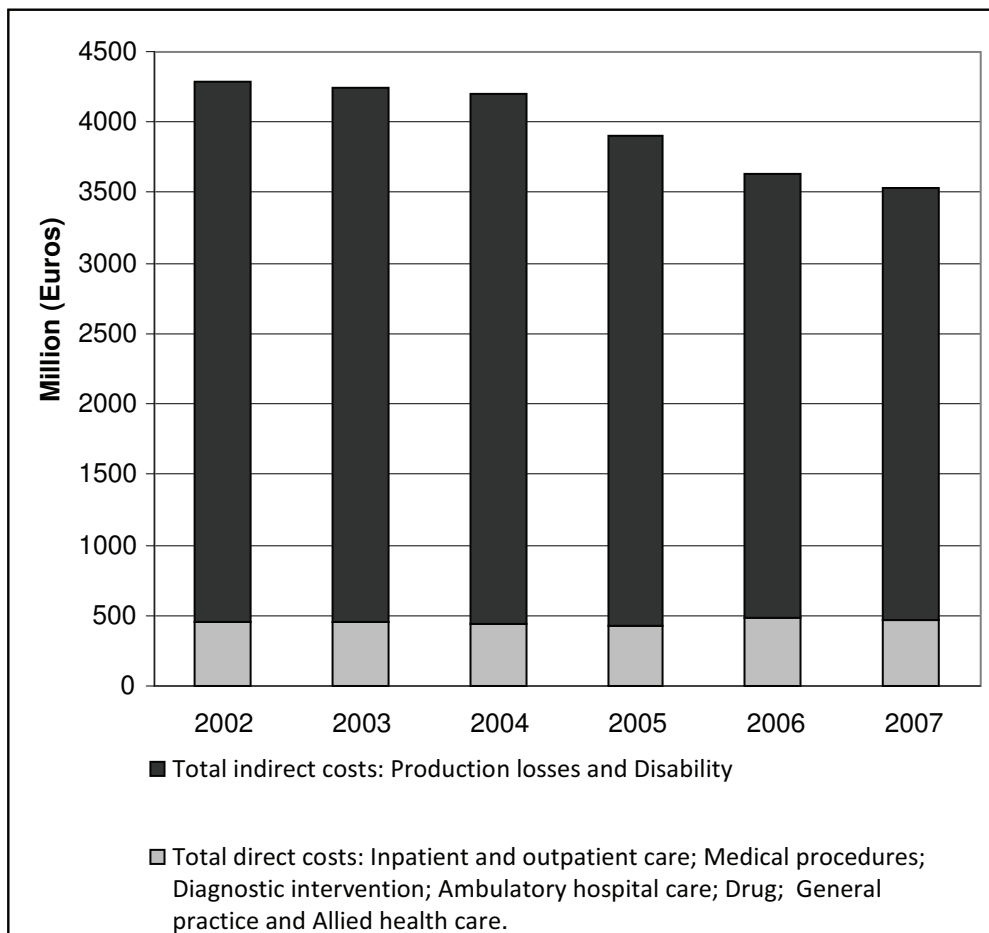


Figure 1. Distribution of the costs of back pain for Dutch society in the period 2002 to 2007

Medical procedures costs

The total number of operations for back pain in the Dutch hospitals was 30,032. The total costs of medical procedures were € 15,043,708. Total costs of fees regarding medical procedures declared by medical specialists were € 5,400,238. Total costs of fees declared by the anaesthesiologists were estimated € 2,280,131. In total regarding 30,032 operations for the back pain, the costs were estimated at € 23 million in 2007 (0.7% of the total costs of back pain).

Diagnostic test costs

A total of 474,382 referrals for patients with back pain were made by general practitioners in 2007. Of these referrals, 28,463 patients were referred for an X-ray, 5,693 patients for an MRI, 5,693 for a CT and for 8,064 patients a laboratory test was carried out. In 2007, the cost prices for these examinations were respectively € 44, € 187, € 31 and € 23. Total costs for medical examinations were estimated at € 3 million in 2007 (0.1% of the total costs of back pain).

Drug costs

LINH reported that 154 patients per 1000 Dutch inhabitants, who had visited their general practitioner because of back pain, received prescribed medication. The number of prescriptions for back pain in general practice on national level was 2,519,131 in 2007. The share of these prescriptions was 758,258 for nonsteroidal anti-inflammatory drugs, 146,110 for benzodiazepine, 143,591 for paracetamol and 118,400 for opioids. The price we used for each prescription was respectively € 18, € 21, € 10 and € 26. Total costs of prescribed medication by general practitioners were estimated at € 21 million in 2007 (0.6% of the total costs of back pain).

General practice costs

In 2007, the tariff for one general practitioner visit was € 21. LINH reported a total of 328 visits for back pain per 1,000 Dutch inhabitants in 2007. Extrapolated to the Dutch society ($328/1,000 * 16,357,992$), the total number of visits to a general practitioner due to back pain was 5,371,801. This resulted in total costs of € 113 million (3.2% of the total costs of back pain).

Allied health care costs

In 2007, the total costs for allied care health care were estimated at € 232 million which constitutes a proportion of 6.6% of the total costs of back pain. These costs were composed by costs of back pain in physical therapy practice (€ 204 million); in exercise therapy practice (€ 21 million) and in manual therapy practice (€ 7 million).

The cost price for a physical therapist visit was € 24. Within the LIPZ-network patients had visited their physical therapist 68,776 times because of back pain. To extrapolate the number of visits extracted out the LIPZ-network to a national level, we multiplied the average number of treatments per LIPZ-practice ($68,776/38$) with the total number of practices in The Netherlands (4,688). The cost price of one visit to an exercise therapist was € 24. A total of 25,310 visits to an exercise therapist were recorded in the LIPZ-network. By extrapolating these visits to the Dutch situation, a total of 848,096 visits were estimated. The cost price for a manual therapist visit was € 33. LINH had registered that per 1,000 Dutch inhabitants, 28 patients with back pain were referred by their general practitioner. Extrapolated to Dutch society, 68,074 patients had visited a manual therapist, with a total number of visits of 206,111.

Indirect costs

Production losses costs

The number of sick leave days because of back pain reported by the occupational health service ArboNed was 908,571 days in 2007. Extrapolated to the Dutch working population by 100/15, the total days of sick leave due to back pain were 6,057,140 days. Figure 2 gives an impression for the volume of sick leave in the period 2002 – 2007. The extrapolated costs of production losses for back pain in The Netherlands were estimated at € 1,699 million in 2007 (48.1% of the total costs of back pain).

Disability costs

The total costs of disability due to back pain were estimated at € 1,361 million in 2007 which comprises a proportion of 38.5% of the total costs of back pain. These costs were spent on disability pensions for 94,759 persons with back pain who received a disability pension for in total 52 million days.

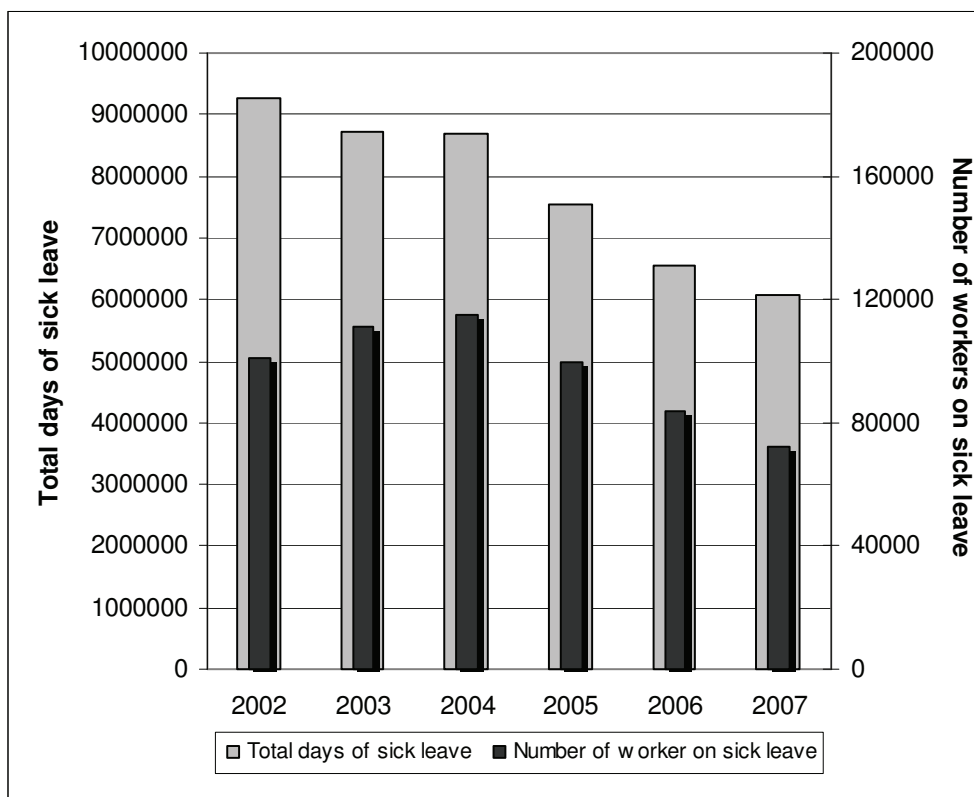


Figure 2. Number of workers on sick leave due to back pain and the total number of days of sick leave due to back pain for the years 2002-2007

The costs of disability can be divided over three categories: 1. disability pension for employed was estimated 1,125 million with a mean daily pension of € 45; 2. disability pension for self-employed was estimated 66 million with a mean daily pension of € 30; and 3. disability pension people under 18 years who are disabled was estimated 12 million with a mean daily pension of € 39. A total of € 159 million was spent on the group which includes people on temporary contracts who lost their job during the two years.

DISCUSSION

In this study we have assessed the financial burden of back pain to Dutch society for the period 2002 to 2007 with a top-down approach. Over time, the total costs of back pain to Dutch society decreased from € 4.3 billion in 2002 to 3.5 billion in 2007. These costs were split unequally between direct costs (11 - 13%) and indirect costs (87 - 89%) and equated 0.9% in 2002 to 0.6% in 2007 of the GNP (Appendix 1).

Comparison with other studies

If we compare the data of this study to the data of 1991, the results of this study indicate for the period 2002-2007 higher direct medical cost of back pain. However, some direct cost categories were much higher in 1991: inpatient care (+119%), and outpatient care (+90%). Overall, the indirect costs were much lower in the present study compared to 1991 (-28%). The difference between this earlier estimate and the current study may be due to the introduction of new laws regarding health insurance and sickness benefits^{9,25}, but also due to different assumptions made and data used. In the last decade databases which register data related to back pain were set up. This makes the more recent data more reliable than the data of 1991.

Comparison of the results of the present study with international studies is difficult. It should be noticed that for several reasons comparisons between international studies should be made with caution. First, health care systems and social security systems differ between countries.¹ Second, cost perspectives adopted in studies vary.⁶ Third, case definitions of back pain differ among studies and finally, the cost categories included differ between studies. However, a recent review identified 27 studies that have previously attempted to estimate direct, indirect or total costs associated with low back pain. Regardless the difference in methods used, the studies suggest that by far the largest component of the costs due to back pain for society was lost productivity.⁶ This is inline with the findings of this study.

Strengths

The data of our study are relatively accurate, because we were able to use several validated databases that measure data on a national level. Therefore, for most cost categories, no assumptions had to be made. Another strength of this study is the large number of costs categories that was included. Besides the main categories in cost of

illness studies, we also calculated cost of medication use due to back pain, and differentiated in hospital costs and allied health care costs.

Limitations

Several limitations of this study must be pointed out. First, regarding the estimation of costs of back pain, several assumptions were necessary which may have caused over- or underestimation. Cost for general practice increased with 95% in 2006. Because more accurate registration of general practice use was available since 2006, data before 2006 provides probably an underestimation. Also the drug costs may have been underestimated because we did not include the over the counter medication. Second, in our study we had to use various classification systems. The cost categories may therefore not have represented the same diagnoses, but we believe that this discrepancy is only small. Third, some costs were not included in our study because no data were available. A cost of illness study conducted in Germany showed that the component direct non-medical costs (e.g. alternative medicine and informal care) would add another 9.6% to the total costs for back pain.³⁷ Extrapolating this percentage in a simplistic manner to the data of this study this cost omission may represent an underestimate of about € 336 million. Fourth, we used the human capital method to estimate the cost due to production losses since we did not have sick leave data on an individual level. This method may overestimate the production loss costs compared to the use of the friction cost method which takes into account that employees can be replaced after a certain time period.¹⁵ Studies reported that estimates of work productivity losses with the friction period approach were 30% to 56% lower than with the human capital approach.^{6,9}

Policy implications

Moderating the high costs of sickness absence and disability is a key policy concern in many countries.^{1,19} The results of this study suggest that the Netherlands has a successful disability policy primarily based on reintegration.¹ During the period 2002 – 2007 sick leave among workers with back pain decreased substantially (25%) and the number of people receiving a disability pension because of back pain decreased over the years (26%). Research indicate that this decrease coincided with changes in the management of back pain and with the introduction of new laws regarding sickness benefits.²⁷ In spite of this decrease in the number of people receiving a disability pension, there is room for more cost savings. Development and evaluation of intervention concerning the social security system, primary prevention, and implementation of evidence based return to work interventions are priorities for future research. The process of return to work following ill health has a multifactorial nature, and different “systems”, such as the personal, workplace, health care and insurance system are involved.^{1,17,35} This makes research in this field challenging. The interests of the various stakeholders in The Netherlands and other countries can be conflicting. For example health insurances companies may not want to pay for effective return to work interventions because primarily employers/companies will benefit. It is therefore a challenge as well to bring all the

relevant stakeholders together for the prevention of disability. Policy interventions are needed to bring the players onside.¹ In addition, reviews of interventions studies focussing on return to work for back pain patients show that there is (moderate) evidence of positive effectiveness for return to work.^{8,11,30} The challenge will be to implement these interventions in (occupational) health care.

CONCLUSIONS

In spite of reduction of costs due to back pain for the Dutch society over the past years, the costs remain tremendous. The economic impact is mostly due to the indirect costs of work absenteeism and disability. Recent Dutch policy interventions to lower the indirect costs appear to be successful but there is still room for cost savings by policy intervention.

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Appendix 1. Information to extrapolate the costs to Dutch society for each year

	2002	2003	2004	2005	2006	2007
General information						
Dutch population (millions) ¹¹	16.1	16.2	16.3	16.3	16.3	16.4
Discount factor for cost prices ³³	107.6	109.9	111.2	113.1	114.4	116.2
Gross National Product in € (billions) ¹¹	482.4	469.5	504.3	515.9	554.7	576.9
Direct costs						
Total physical therapy	4,809	4,809	4,767	4,727	4,688	4,688
Practices in LiPZ-network	42	42	40	43	39	38
Total exercise therapy practices	617	617	630	645	645	645
Practices in LiPZ-network	42	42	43	41	40	40