CHAPTER

Introduction

1

Introduction

Aim of this thesis

The overall aim of this thesis is to increase scientific knowledge on frequent sickness absence (SA). The specific aims are to examine the factors associated with frequent SA, to predict long-term SA among employees with frequent SA, and to investigate an e-health intervention to reduce SA frequency among these employees in the future. This first chapter presents the background and aims of this thesis and provides an overview of the research questions. It concludes with an outline of the thesis.

Personal background for this research

During my 17 years as an occupational physician at ArboNed, a large Dutch occupational health service (OHS), most of my time has been spent on the guidance of employees on long-term SA. Time spent on prevention was divided between guidance of organizations on general preventive actions at the workplace and preventive consultations, including consultations with employees with prior frequent SA, who had returned to work. I noticed that some employees on long-term SA had already had prior frequent SA (i.e. ≥3 spells in a year). Moreover, in one organization with a heavy emotional workload I found myself (correctly) predicting that employees with frequent SA would eventually visit me in connection with long-term SA. At that time, a slogan introduced by a commercial institute became popular among occupational health professionals and organizations in the Netherlands: 'Sick is sick, but sickness absence is a choice'. This is often interpreted as: 'Frequent sickness absence is a motivational issue', implying that it concerns employees who do not want to go to work. This seemed, however, not to be the case among employees with frequent SA whom I encountered, most of whom did not seem to lack an intrinsic motivation to work. These observations piqued my interest in further study of frequent SA.

Frequent sickness absence

Definition of frequent sickness absence

Sickness absence (SA) refers to a leave from work due to any (work-related as well as non-work-related) illness or injury. OHSs in the Netherlands record SA from the first day of SA to the day of return to work, based on information from the employer.

The most common definition of frequent SA is, in practice, 3 or 4 spells in a year, irrespective of length. Like most OHSs in the Netherlands, ArboNed also uses this definition. In 2008, Koopmans et al. [1] published an article including frequent absentees as a subgroup, defining frequent SA as 4 or more spells per year. Among a population of 53.990 employees, they found that 39% of

employees with frequent SA (n=4126) had frequent SA in the following year, and 61% within 4 years. They also found that 19% of employees with frequent SA had long-term SA in the follow-up year, and 50% within 4 years. Unpublished data from Koopmans et al. also showed that 50% of employees with 3 or more spells developed long-term SA within 4 years. More recent research [2,3] has used the definition involving 3 spells per year. As more employees have ≥3 spells per year, rather than ≥4 spells, and without a clear difference in long-term SA, we decided to use ≥3 spells per year as the definition of frequent SA. In the literature, frequent SA is sometimes divided into subgroups: frequent SA with only short spells (e.g. 1 day-1 week), or frequent SA with at least one spell lasting a longer period of time (>1 week) [1,4].

Consequences of frequent sickness absence

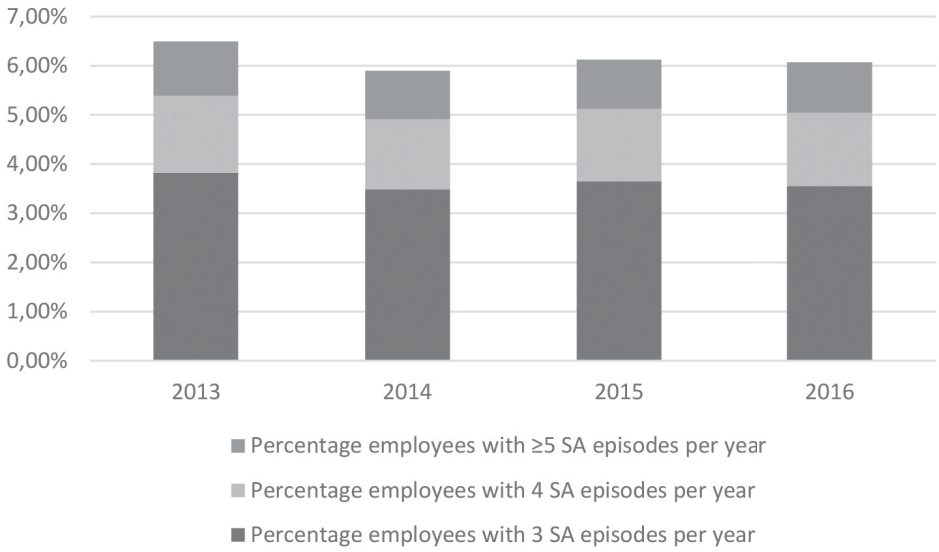
For employers, frequent SA interferes with work schedules and work organization. Failure to immediately replace an employee with SA with another qualified person may lead to production loss and to increased work load for the remaining employees. In today's specialized working environment, even timely replacement cannot prevent production loss, as a replacement employee must still learn and adapt to the procedures of the organization. Moreover, loss of continuity may lead to loss of quality in services as well as increased costs for employers. This holds especially in countries where employers are burdened with financial compensation of SA, as they must pay both the replacement and the employee on sick-leave. In the Netherlands, the costs related to frequent SA are at least 100 mln Euro per year (123 mln US Dollar) [5].

For employees themselves, frequent SA can affect social relations at work and potentially deepen feelings of distrust and blame among colleagues [6]. An additional problem for employees is the increased risk of long-term SA [1,7]. Long-term SA may distance employees from the workplace and may result in social isolation and poverty [8]. Employees with frequent SA are also at increased risk of dismissal [7,9].

Frequent sickness absence in the Netherlands

Frequent SA is not an indicator registered on a national or international level. Data from ArboNed, covering about 600.000 employees, show that 6.23% of the employees had frequent SA (i.e. ≥3 spells per year) in 2013, 5.58% in 2014, 5.76% in 2015 and 6.07% in 2016. Most of the frequent absentees had 3 spells in a year. The percentages of employees with exactly 3 spells per year in these years were resp. 3.82%, 3.48%, 3.65% and 3.55%. The mean percentage of employees with exactly 4 spells was 1.5% and the mean percentage of employees with ≥5 spells per year was 1%. Figure 1 provides an overview.

Figure 1. Percentage of employees with frequent SA in a Dutch OHS population, 2013-2016



Theoretical background

Factors associated with frequent sickness absence

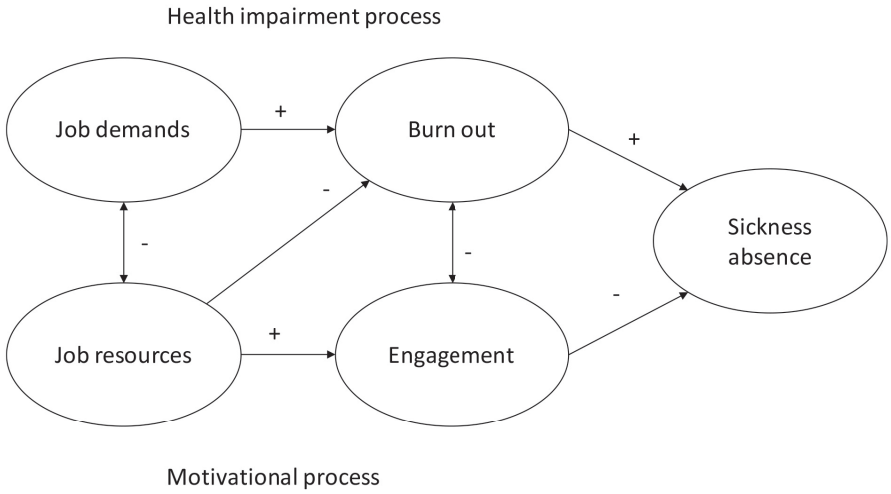
Earlier research indicated that poor health, poor working conditions, high physical and mental workload, female gender, high alcohol consumption and smoking were related to a higher SA frequency [10]. High job resources, good working relations, motivation ('work pleasure'), older age, being married, having a satisfactory private life and a higher education level were associated with a lower SA frequency. Other studies found that poor health and chronic diseases were related to a higher SA frequency [11-13]. Von Thiele et al. reported that poor work characteristics – poor physical work environment, high physical load, low support and low influence at work – were related to a higher SA frequency [14].

Theoretical framework

No specific theoretical models of frequent SA exist, neither for its determinants nor for interventions to reduce it. The Job Demands-Resources (JD-R) model includes SA frequency as one of its potential outcomes [15,16]. The JD-R model assumes that working conditions vary across organizations and occupations. Two specific sets of working conditions – job demands and job resources – can lead to job strain (burnout) and betterment (work engagement). Examples of job demands are work pace, emotional demands and work-home interference. Examples of job resources are feedback, learning opportunities, supervisor support, co-worker support and

autonomy. The JD-R model posits a health impairment process [17], in which chronic high job demands lead to burnout and long-term SA [18-21]. Burnout can lead to health problems such as depression, cardiovascular diseases, and psychosomatic complaints [22]. Chronic low job resources are associated with poor work engagement, and both frequent and long-term SA [16,18,23]. This is called the motivational process. Figure 2 shows the JD-R model in relation to sickness absence, based on Bakker et al. [17] and Schaufeli et al. [16,24].

Figure 2. Theoretical framework: the Job Demands-Resources model and frequent sickness absence (based on Bakker [17], Schaufeli [16,24])



The JD-R model was used as theoretical framework for this PhD thesis; it is a broad concept, including work characteristics and it is related to SA frequency. This makes the JD-R model suitable as an entrée for intervention possibilities for both employers and employees, to reduce SA frequency.

Interventions to reduce frequent sickness absence

Interventions to reduce SA take place in the context of a country's social security and occupational health system. A country's social security system influences sickness absence. Dutch employers are responsible for return to work for at least the first two years of sickness absence. Employers must pay at least 70% of an employee's income, irrespective of the cause: i.e., even in the event of non-work-related sickness absence. Organizations are obligated to have a contract with an OHS or an occupational physician. Under the Gatekeeper Improvement Act [25], a sick-listed employee

must consult an occupational physician within 6 weeks after calling in sick. The occupational physician certifies sickness absence and gives advice about work accommodation and (gradual) return to work.

Practice: Management of frequent sickness absence in the Netherlands

Although there are legal possibilities to use financial incentives to reduce (frequent) SA, most organizations continue to pay a salary as of the first SA day. As a result, in most cases no direct financial stimulus exists for the employee to go to work when feeling ill. The employer has several options: a discussion with the employee to stimulate reduction of frequent SA, guidance towards a job termination, or a request for support by the OHS.

In the Netherlands, OHSs tend to advise an active approach on the part of employers. The term 'frequent verzuimgesprek' is a common Dutch expression for managers, meaning 'frequent SA conversation'. The goal of this conversation between employer and employee is to discuss the employee's frequent SA spells, the manager's concern that these are problematic or unacceptable, and his/her desire to see a reduction in their frequency. Such conversations easily convert into discussions on the frequency, the (medical or non-medical) reasons behind the SA spells, and whether SA was actually necessary. Many OHSs train managers to conduct these often difficult conversations, including a focus on solutions needed to change the frequent SA pattern. Many OHSs also offer support by a social worker in cases of psychosocial problems or consultations with the occupational physician.

Research

To date, intervention studies with SA frequency as an outcome measure are scarce, and none focus specifically on employees with frequent SA. Kant et al. [26] studied the effect of a structured early consultation with the occupational physician to reduce SA among office workers at high risk of long-term SA. Outcomes were SA duration and SA frequency. Duijts et al. [27] examined the effect of preventive coaching on SA duration and SA frequency in employees at risk of SA due to psychosocial health complaints. Both Kant and Duijts reported reduction of SA frequency over time, through an intervention based on consultations with occupational health professionals. However, despite large study groups they found no significant effect on SA frequency after a 12- months follow-up period [26,27].

As coaching and personal consultations are time consuming (and therefore expensive), during the last 10 years an increasing number of e-health tools have been developed, focusing on outcome measures such as health [28-31], lifestyle [32,33], and psychological health and well-

being [34,35]. However, in the field of occupational health relatively few e-health studies have focused on SA as outcome measure. Beiwinkel and colleagues tested a 12-week e-health program and compared the results with those of a waiting-list control group that received written psycho-education. Although both groups showed a high reduction in SA frequency (intervention group 67% and control group 83%), no statistical difference in SA frequency was found between the groups [36]. Through an internet-based problem-solving training Ebert et al. [37] found a reduction in depressive symptoms among a group of teachers, but no difference between the intervention and control groups on the secondary outcome measure self-rated absenteeism. Other studies showed that a self-guided internet-based stress management intervention resulted in a significant reduction of perceived stress in a group with increased stress, but no reduction in absenteeism [38-40].

In this PhD project an e-health intervention was developed, based on the JD-R model, and tested for its effectiveness in reduction of frequent SA (primary aim), total SA days, burnout and increase of engagement and work ability (secondary aims).

Thesis aims and research questions

The overall aim of this thesis is to increase scientific knowledge on frequent SA. The first aim of this thesis was to examine the factors associated with frequent SA (chapters 2 and 3). The second aim was to investigate which employees with frequent SA will develop long-term SA in the future (chapters 4 and 5). The third aim was to evaluate a novel e-health intervention to reduce SA frequency among employees with frequent SA (chapter 6).

Research Questions

1. Which factors are related to frequent sickness absence? (chapter 2)
2. Is work ability associated with both frequent and long-term sickness absence? (chapter 3)
3. Which factors are associated with future long-term sickness absence among employees with frequent sickness absence? (chapter 4)
4. Can we discriminate frequent absentees at risk for long-term sickness absence from frequent absentees who are not at risk of long-term sickness absence? (chapter 5)
5. Is a new e-health intervention tool effective in reducing sickness absence frequency among employees with frequent sickness absence? (chapter 6)

Thesis outline

This thesis consists of seven chapters, of which this introduction is the first. Chapter 2 presents the factors related to frequent SA, reported by frequent absentees in a focus group study. Chapter 3 examines the associations between work ability and frequent SA with spells <2 weeks, and frequent SA including spells ≥2 weeks (combined SA), using a multinomial cross-sectional regression analysis. The association between work ability and long-term SA is also investigated. Chapter 4 describes the result of a systematic review conducted to identify factors associated with future long-term SA among employees with frequent SA. Chapter 5 describes the results of two prediction models developed to identify those frequent absentees at risk of future long-term SA. In chapter 6 the effectiveness of a novel e-health intervention on frequent SA in a randomized controlled trial (RCT) is examined. The intervention consisted of web-based personalized feedback on an extensive questionnaire and was used as a stand-alone tool or in combination with a consultation with an occupational physician. Secondary outcome measures are total SA days, burnout, engagement, and work ability. Chapter 7 is a general discussion of the main findings of this thesis and the methodological considerations and presents recommendations for occupational health practice, management and future research.

Overview of research studies

Table 1 provides an overview of populations, sample size, design, independent factors and outcome measures of the studies by chapter.

Table 1. Overview of chapters and studies

Chapter	Population	n	Design	Setting	Independent variables	Dependent variables
2: Focus group study exploring factors related to frequent sickness absence	Dutch employees with frequent SA	15	Focus group study, 3 focus groups	Focus groups	Subject of research	• Frequent SA
3: Associations of work ability with frequent and long-term sickness absence	Dutch employees from various economic settings	3660	Cross-sectional study	OHS, occupational health survey	• Work ability • Work ability dimensions	• Frequent SA • Long-term SA (≥ 2 weeks) • Combined frequent and long SA
4: Factors associated with future long-term SA among frequent absentees: a systematic review			Systematic review		Subject of research	• Long-term SA (> 1 week)
5: Predicting long-term SA among employees with frequent SA	Dutch employees with frequent SA from various sectors	3563	Longitudinal cohort study	OHS, occupational health survey	• Age • Gender • Education • Marital status • Psychosocial work characteristics • Burnout • Work engagement • Prior long-term SA	• Long-term SA (≥ 42 consecutive days)
6: Effect of an e-health intervention to reduce sickness absence frequency among employees with frequent SA: RCT	Dutch employees with frequent SA	82	RCT	Intervention study among 21 organizations		• SA frequency • Total SA days, work ability, burnout, engagement

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