



MANAGING SICKNESS ABSENCE

J.A.H. Schreuder

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RIJKSUNIVERSITEIT GRONINGEN

## MANAGING SICKNESS ABSENCE

leadership and sickness absence behaviour  
in hospital care

Proefschrift

ter verkrijging van het doctoraat in de  
Medische Wetenschappen  
aan de Rijksuniversiteit Groningen  
op gezag van de  
Rector Magnificus, dr. E. Sterken,  
in het openbaar te verdedigen op  
woensdag 3 oktober 2012  
om 14.30 uur

door

Johanna Alice Harma Schreuder  
geboren op 19 januari 1966  
te Noord-Scharwoude

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**Managing sickness absence**  
*Leadership and sickness absence behaviour in hospital care*

Thesis University of Groningen, the Netherlands – with summary in Dutch

ISBN: 978-90-367-5710-2  
978-90-367-5717-1 (E-book)

This study was conducted within the research institute SHARE and under the auspices of the research program Public Health Research (PHR)

The publication of this thesis was generously supported by:

- Graduate School of Medical Sciences, Research Institute SHARE, University Medical Center Groningen, University of Groningen
- Ziekenhuis Nij Smellinghe, Drachten

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# Introduction

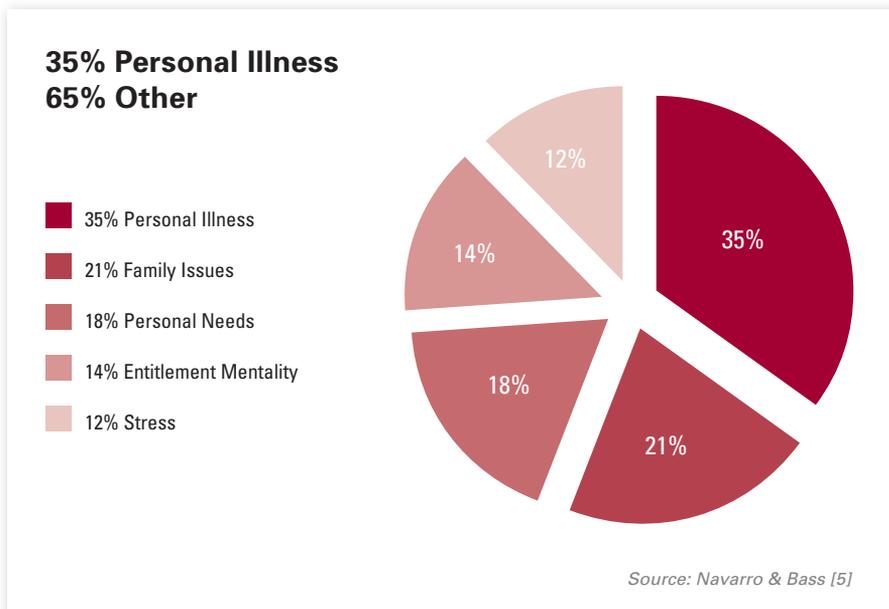


## INTRODUCTION

A complex mixture of legislation, processes, stakeholders and circumstances influence an individual's decision to call in sick, stay at work or return to work. In the past, sickness absence was considered a socioeconomic and political topic rather than a medical or public health issue. This changed when it was reported that high levels of sickness absence predicted future health outcomes, early retirement, and mortality [1-3]. Nowadays, sickness absence is seen as a major public health problem and sickness absence research is a top priority in Europe [4].

### 1.1 Unscheduled absence, sickness absence and zero-absenteeism

Employee absences include scheduled and unscheduled time off. Only 35% of the unscheduled absences are attributed to personal illness. The other 65% of absences are due to other reasons, including family issues, personal needs, entitlement mentality (i.e. the feeling that one is entitled to a day off) and stress (figure 1). Without insight into the specific reasons for absence, organizations may be surprised to learn that many unscheduled absences have nothing to do with illness [5].



**FIGURE 1. Reasons for unscheduled absence**

In this thesis, sickness absence is defined as non-attendance at work due to a health complaint, while the employer expects attendance [6]. Most countries have policies or social security systems that compensate sickness absence. If there is no policy

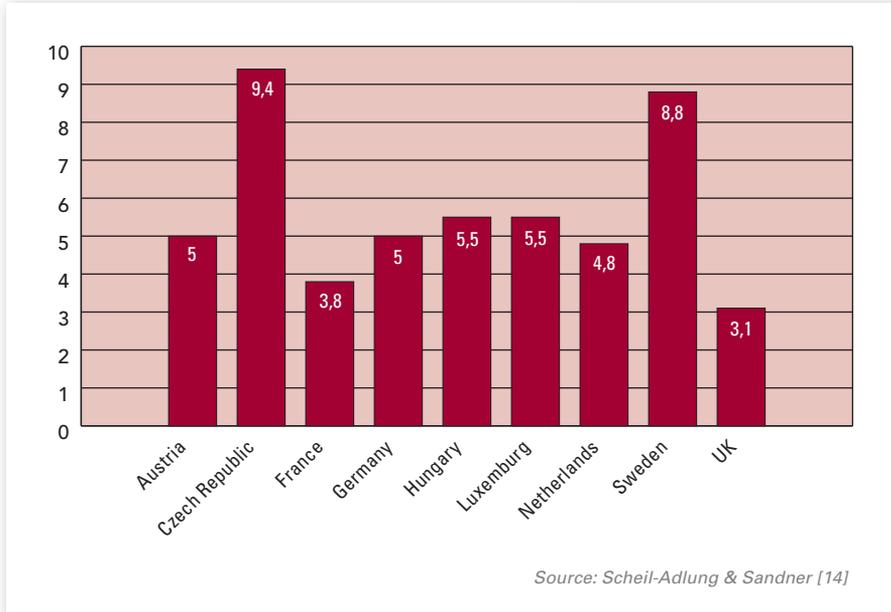
for taking paid time off, many workers continue to go to work when they are ill [7] which can lead to sickness presenteeism, a construct that is explained later in this chapter [8]. Countries with very limited sickness absence benefits are Japan, Canada and the United States [9]. In Japan the overall sickness absence rate is very low and estimated between 0.2% and 1% with a mean of 0.4% [10]. In 2011, the sickness absence rate was 2.1% in the United States [11]. In Canada the total work time missed for personal reasons was 3.2%, which included illness or disability as well as personal or family responsibilities [12].

### 1.1.1 Sickness absence levels in Europe

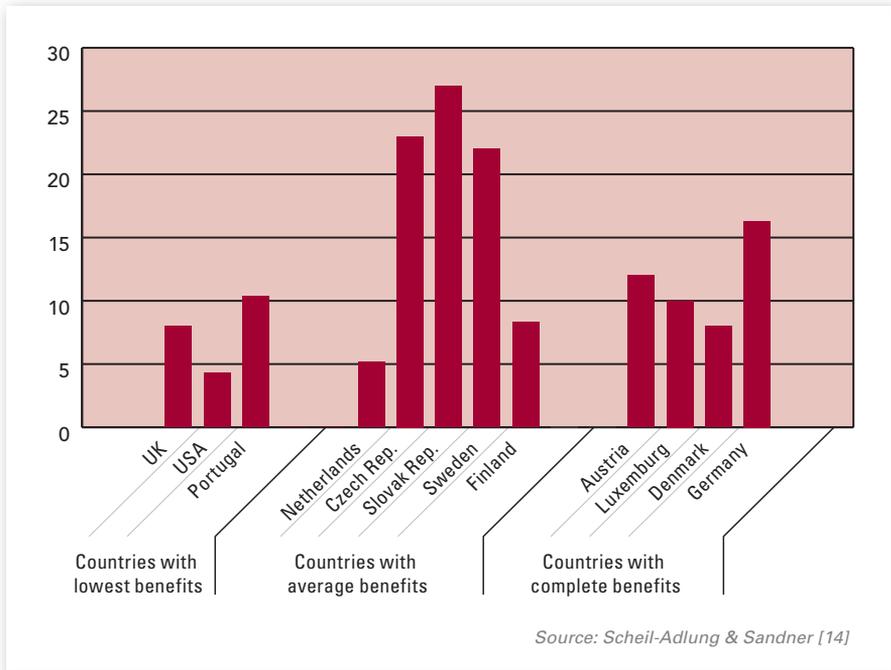
In Europe, sickness absence rates differ between countries. According to the International Monetary Fund, European sickness absence rates in 2000-2008 ranged from 1.5% (Iceland) to 6.2% (Sweden)[13]. All countries have a labor law that requires employers to provide paid sick days and/or paid sick leave [9]. The extent to which sick days are paid influences sickness absence rates. Gimeno et al. found that countries with full pay periods for temporary work incapacity (that is Finland, the Netherlands, Luxembourg, Austria, or Belgium) had higher sickness absence levels than countries where paid sickness benefits are limited (UK, France) [4]. Scheil-Adlung and Sandner [14] compared sickness absence days as percentage of annual working days in EU countries (figure 2).

In contrast to Gimeno et al., they found average numbers of workdays lost in countries with complete benefits, such as Austria, Luxembourg and Germany (figure 3). In countries with average sickness absence benefits such as the Czech and Slovak Republic and Sweden, most workdays were lost due to sickness absence.

Figure 3 stratifies countries by the extent of sickness absence benefits. The countries with the most complete benefit schemes and highest income replacements during sickness absence, such as Austria, Luxembourg and Germany, show average numbers of workdays lost due to sickness absence. In countries with average sickness absence benefits such as the Czech and Slovak Republic and Sweden, most workdays were lost due to sickness absence. Both in Sweden and the Netherlands medical certificates are required only after a certain period of sick leave absence; however there are significant differences in the number of sick leave days between the two countries with 22 and 5.5 days respectively. The income replacement rate is in Sweden 22 days with 80 percent, which is lower than in countries with less paid sick leave incidence such as Austria, France, Germany and Luxembourg where 100 percent of income is replaced during sickness absence [15].



**FIGURE 2. Paid sick leave days in percent of annual working days in EU countries, 2006**



**FIGURE 3. Number of days lost due to sickness in selected countries, 2000**

### 1.1.2 Sickness absence levels in the Netherlands

The core sickness absence measures in Dutch national statistics are the percentage and the frequency of sickness absence. The percentage of sickness absence is calculated as:

$$\% \text{ sickness absence} = \frac{\text{No. of sick-leave days in current, new or repeated spells during the measured period}}{\text{No. of calendar days in the measured period}} \times 100$$

The frequency of sickness absence is calculated as:

$$\text{Frequency of absence} = \frac{\text{No. of new or repeated sick-leave spells during the measured period}}{\text{No. of persons working in the measured period}}$$

The sickness absence percentage in the Netherlands averages 4.3% and is fairly stable since 2004 (figure 4). In 2010, the sickness absence percentage in the total Dutch workforce was 4.2% while sickness absence averaged 5.2% in the Healthcare and Welfare sector (figure 5).

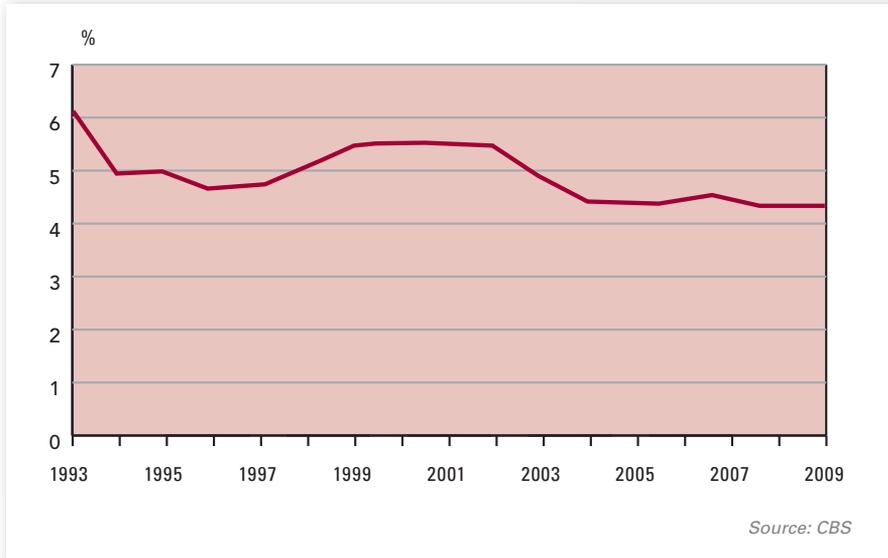


FIGURE 4. Sickness absence levels in the Netherlands, period 1993-2009

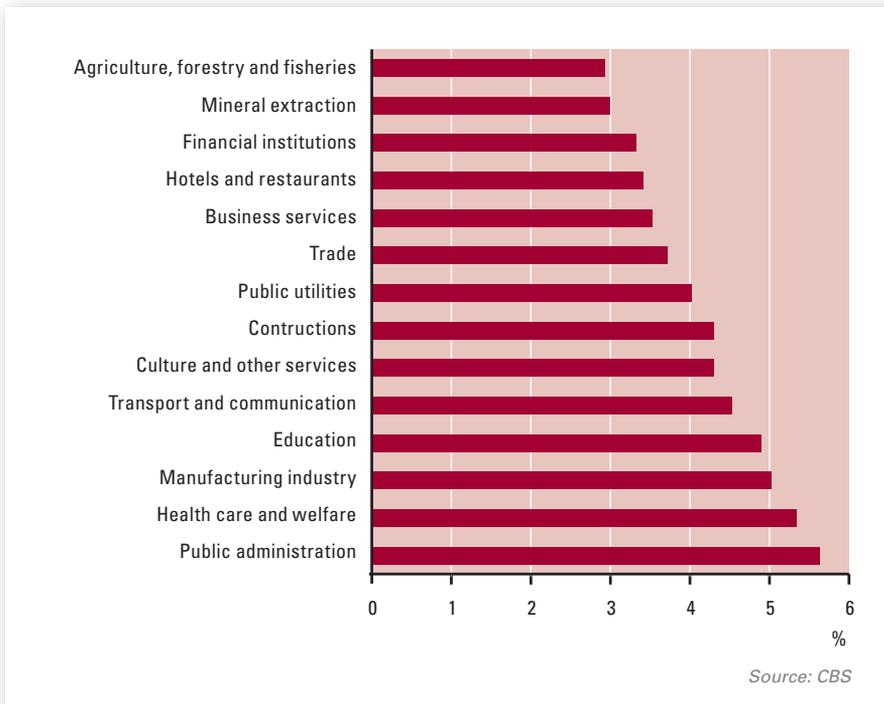
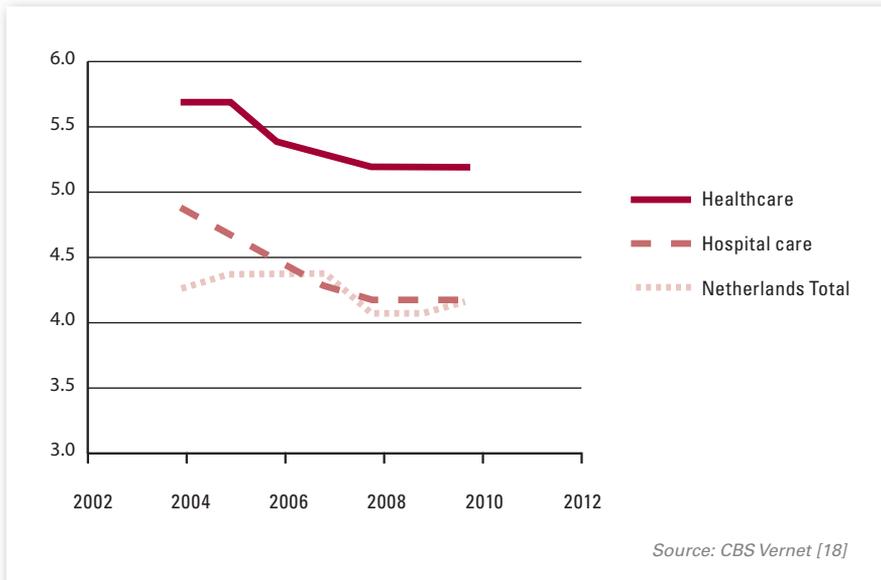


FIGURE 5. Sickness absence distribution across economic sectors, 2010

Though sickness absence is high in healthcare, sickness absence levels in the sub-sector of hospital care have declined from 4.9% in 2004 to 4.2% in 2010, which is the average sickness absence percentage in the Netherlands (figure 6).



**FIGURE 6. Sickness absence rates in the Netherlands total, healthcare, hospital care, 2004-2010**

The frequency of sickness absence in hospital care has declined from 1.58 times per employee in 2004 to 1.38 times per employee per year in 2010. Frequent sickness absence in healthcare is still a major problem leading to staff shortages that increase the workload and negatively affect performance, productivity, and both efficiency and quality of care [15-17].

### 1.1.3 Zero-absenteeism in the Netherlands

Some employees seldom call in sick, though they face the same difficulties in work, are managed by the same supervisors and are subject to the same organizational policies and practices (OPPs). These zero-absentees are usually unnoticed in companies and do not get the attention or respect they need in companies that are struggling to manage sickness absence. The extent of work attendance used in organizations is generally expressed in the percentage of employees without sickness absence during a period of one year. In the Netherlands, the one-year zero-absentee rate in 2010 was 37.4% in the total healthcare sector and 38.2% in the subsector of hospital care [18].

### 1.1.4 Sickness absence levels in Nij Smellinghe Hospital

In Nij Smellinghe Hospital (Drachten, the Netherlands), the management of sickness absence is an important part of the OPPs. Quarterly analyses of sickness absence rates are evaluated with managers, human resource managers (HRM) and occupational physician (OP), after which goals are set and actions discussed to improve sickness absence management. The objective of the OPPs is to reduce unscheduled absence and only accept sickness absence when someone is not able to fulfill work tasks due to the impairments or limitations of one's illness. The hospital restricts sickness absence to personal illnesses and provides other types of leaves for reasons, such as care for family members. The supervisor manages sickness absence and receives support and advice from HRM and OP. Frequent absenteeism is one of the major issues in the management of sickness absence, since employees with frequent short sickness absence episodes are at increased risk of future long-term absence [19]. In Nij Smellinghe, sickness absence levels have declined and the numbers of employees without sickness absence have increased over the years. As a result, the hospital was reported to have the lowest sickness absence rates in the hospital care sector in 2010 [18].

## 1.2 Sickness absence policies & practices

### 1.2.1 Sickness absence compensation

In the Netherlands, the employer compensates at least 70% of the income in case of sickness absence due to work-related and not work-related injuries and illnesses for a maximum period of 2 years. The Collective Labour Agreements in healthcare advise to pay 100% of the income in the first year and 70% in the second year of sickness absence. This change from 100% to 70% is seen as an incentive to resume work within the first year of sickness absence. In most healthcare organizations, sickness absence policies are part of the OPPs. Employees report sick to their employer, who sends a sick-report to the occupational health service for recording purposes and as a request to start medical guidance of the sick-listed employee. Short-term sickness absence is self-certified, but medical certification by an OP is required within six weeks of reporting sick. The OP not only issues a sickness absence certificate, but also provides both employee and employer with return to work (RTW) recommendations. Subsequently, the employee and the employer arrange RTW activities, such as accommodated work or transient duties, and agree on a graded-activity scheme of RTW. The recovery and RTW processes are evaluated every 4 to 6 weeks in consultation with the OP. After a period of 2 years, an insurance physician and a labour expert of the Social Insurance Agency scrutinize the RTW process and assess the employee's work capacity. If the employee is considered incapable to work despite adequate RTW activities, then a disability pension is awarded by the Dutch Social Insurance Agency.

### 1.2.2 Role of the occupational physician

The occupational physician (OP) plays an important role in the medical guidance of sick-listed employees. The OP composes a multi-factorial analysis of the factors contributing to an individual's sick leave, including medical, work-related and private life factors as well as illness behaviour and irrational beliefs. In the Netherlands, professional guidelines support OPs in the medical assessment of impairments and the claim on paid sick leave of employees [20]. In addition, OPs also advise and guide sick-listed employees during the process of RTW. In the first consultation, OPs assess an employee's readiness to return to work (RRTW) usually by rules of thumb based on their experience in occupational healthcare. OPs base their RTW recommendations on heuristic decision-making rather than protocols or procedures. Chibnall et al. [21] found that physicians' attitudes and beliefs about symptoms were important in judging a patient's occupational disability than clinical information. Physicians were more consistent in their judgment of occupational disability when pain was high. Physical examination and functional disability information did not add to the consistency of physicians' occupational disability judgments [21]. Moreover, the physician's appraisal of pain and perception of severity of symptoms accounts for the variability in RTW recommendations [22].

## 1.3 Sickness absence research

The work days lost due to sickness and the frequency of sickness absence episodes are the two most commonly used metrics in sickness absence research. The rationale for developing different absence metrics was that they reflect different underlying motives [23-25]. Two types of sickness absences are usually distinguished: short- and long-term sickness absence.

### 1.3.1 Short-term sickness absence

In this thesis, short-term sickness absence was defined according to the British Whitehall and the French Gazel studies as sickness absence lasting 1-7 consecutive days. Chadwick-Jones et al. [26], Gaziel [27], and Avey et al. [28] distinguished two types of short-term sickness absence: voluntary and involuntary. Voluntary absences involve those where the employee is presented with the opportunity to work, but for some reason decides not to go to work [29]. Vacation or leaves to care for family members are examples of voluntarily absences. Short-term sickness absence is also regarded as a type of voluntary absenteeism in the sense that employees decide whether or not to report sick based on their appraisal of illness and work ability [30,31]. Voluntary sickness absence without clear medical impairments usually manifests itself in frequent short absences [32-34]. Such short sickness absences can be regarded as a type of avoidant coping when employees report sick to withdraw from work-related stress and strains [35]. Alternatively, frequent short sickness absence may also reflect a problem-solving coping behaviour when employees take short times off work to recover in order to prevent long-term sickness absence [34,36].

Short-term sickness absence is often considered to be of little importance, because it is not as costly as long-term sickness absence. However, frequent short-term sickness absences result in understaffing and interfere with work processes. Furthermore employees with frequent short-term sickness absences are at increased risk of future long-term absence [19]. Given the association with behaviour and future long-term sickness absence, more attention should be paid to the sickness absence frequency as an important signal, which provides opportunities to intervene.

### 1.3.2 Long-term sickness absence

There is no consensus on long-term sickness absence, though large-scale cohort studies such as the British Whitehall and the French Gazel cohort defined sickness absence >7 consecutive days as long-term sickness absence. In The Netherlands, sickness absence certification is required within 42 days of sickness absence. Hence, in Dutch studies long-term sickness absence is often defined as lasting  $\geq 42$  consecutive days. Long-term sickness absence is related to serious illness with medical impairments that interfere with work. Research on long-term sickness absence focuses on factors that determine the duration of sickness absence and interventions to facilitate and expedite RTW, especially in case of musculoskeletal complaints, mental health problems, cardiovascular problems and cancer.

### 1.3.3 Work presence

It is important to realize that work presence is composed of health presence and sickness presence. Even though a strong association between ill-health and sickness absence is generally assumed [33] the association between good health and work presence is not obvious. Dellve et al. [37] stated that it is important to distinguish between measures of work presence as they differ in relation to incentives, and health- and performance-related consequences. Sickness presence seems to be an important risk indicator for poor health, burnout, sick-leave and decreased performance [37].

#### 1.3.3.1 Sickness presence

In case of sickness, some individuals will go to work and be sickness present, while others call in sick and are sickness absent. Böckermann & Laukkanen [38] found that sickness presence and sickness absence are associated with different factors. For instance, sickness presence is stronger associated with working-time arrangements than sickness absence is. Permanent full-time work, mismatch between desired and actual working hours, shift or period work, and over-time work increase sickness presence, while regular overtime work is associated with lower sickness absence [39]. The literature on sickness presence, i.e. being present at work in spite of sickness and judging afterwards that staying at home would have been better [8,40,41], is expanding since 2000 [42]. People with poor health are often sickness present [43], but several other work-related factors and personal circumstances have also been related to sickness presence. Examples of work-related factors are low replaceability and attendance pressure as a result of having to catch up all work after a period of absence, [8,41,43,44], lack of work resources, [41,45], time

pressure [41], job stress, job insecurity [45,46], and long work hours [45]. Personal circumstances include financial problems [41], individual boundarylessness [41], over-commitment to work [45], conservative attitudes toward sickness absence [45], age [41, 45] and low education limited to compulsory school [41]. Work factors were shown to be stronger related to sickness presence than personal circumstances [45]. High sickness presence was found to be associated with higher future sickness absence [41,45] and productivity loss [47].

### 1.3.3.2 *Zero-absenteeism and long-term work-attendance*

Sickness presence is not synonymous with zero-absenteeism. Zero absentees are individuals who do not report sick during a certain period. The literature on zero-absenteeism is scarce. Only a few articles were found identifying determinants of this type of work presence [37,48,49]. In a group of 3275 Swedish human service workers, one-third had no sick leaves in a period of one year. The highest prevalence of work attendance was found among workers in care for the disabled and the lowest prevalence among workers in care for the elderly [48]. Here zero-absentees were individuals who had not called in sick during a period of one year. Predictors of zero-absenteeism were found in the personal background as well as in work related factors. For instance, temporary employment was found to be a determinant of zero-absenteeism. Older age, having a managerial or supervising position and being self-employed were associated with a lower risk of short-term sickness absence. In contrast, being of male gender, high education, flexible employment, working full- and over-time and a high work satisfaction were related to a lower risk of long-term sickness absence. In women, a high sense of coherence, which is an indication of the ability to cope, solve problems, and engage in healthy behaviours, was shown to have a preventive effect against both short- and long-term sickness absence. A managerial position, working overtime and higher education, acted as predictors of work presence for men but not for women [49]. Also increased leadership-related psychosocial qualities were related to one-year zero-absenteeism. Especially high rewards, recognition, and respect were most strongly related to work attendance. Furthermore, a positive relation was seen between increased work attendance and working in units where there was respect and trust (in both the supervisor and top management), a positive work climate, and an open discussion culture.

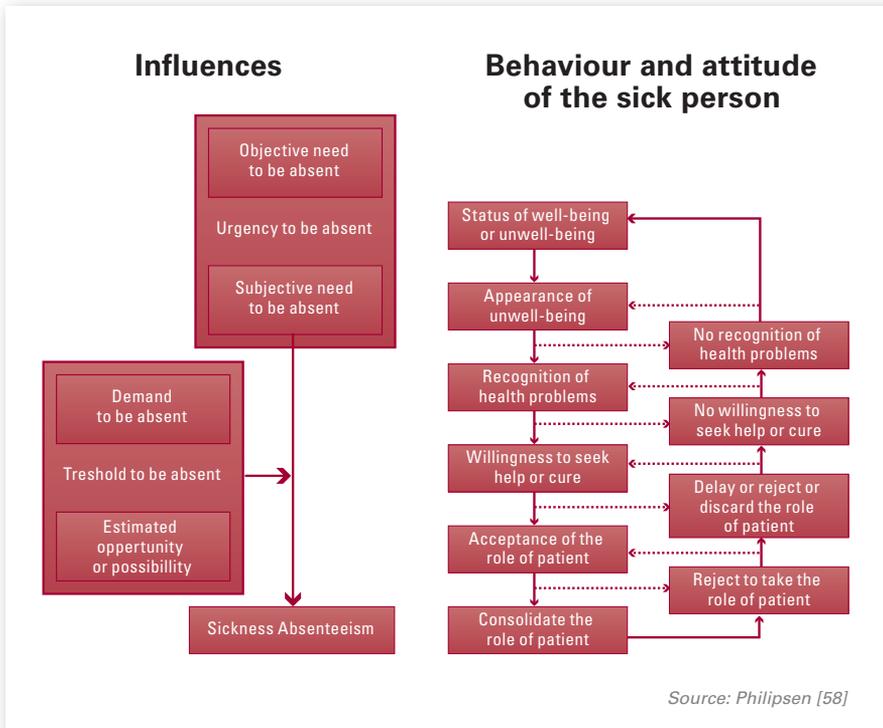
In Nij Smellinghe hospital, the departments with a high proportion of employees without sickness absence also score high on employee satisfaction despite reorganizational changes of the wards. This started our interest in zero-absenteeism. In our research we defined zero-absenteeism as no sickness absence in the last five years.

## 1.4 The employee: coping, readiness and sickness absence behaviour

Sickness absence levels vary across industries, organizations, and organizational units. Epidemiological studies conducted in different countries have shown that medical professionals experience very high levels of work stress [50-52]. Work stress can be defined as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker [53]. There are a variety of factors that may cause work stressor in hospital workplace, such as increasing workload, uncertainty concerning treatment, emotional response to suffering and dying patients, organizational problems and conflicts, insufficient skills and insufficient social support at work [54,55]. It has been suggested that work stress in the absence of adequate coping resources can contribute to poor health outcomes and a decrease in service provision [56,57]. Despite its obvious relation to health, sickness absence has behavioural and social aspects, typically focused on by social scientists. Three types of models provide the frameworks to explain sickness absence behaviour: decision-making models [43,58-60], workload – capacity models [61,62], and the work stress models [63-66].

### 1.4.1 Decision-making models

Decision-making models are based on the assumption that sickness absence is primarily an individual's decision and that the employee has certain latitude to call in sick or go to work. In 1969, Philipsen [58] developed a model in which decision-making was divided in the need, urgency, opportunity, and possibility to call in sick. The need to call in sick addresses the unwell-being that makes an employee feel unable to perform work. The urgency to call in sick refers to the extent of impairments and limitations as a reason for sickness absence. The opportunity to call in sick represents environmental factors, such as sickness absence policies, sickness benefits, and organizational absenteeism culture. The possibility to call in sick is based on the consequences of absence for the employee himself (figure 7).



**FIGURE 7. Decision-making model**

In this model, sickness absence occurs when the normal status of well-being changes in feeling unwell. If this unwell state is appraised as a health problem, the employee may ask for help or cure, take the role of ‘patient’, and call in sick. In course of time, the employee can return to an acceptable status of well-being and decide to end his sickness absence [67]. In every stage of Philipsen’s model, there is certain decision latitude for the employee depending on the seriousness of disease. Sickness absence due to serious disorders with severe limitations offer few decision latitude to report sick and is therefore frequently referred to as ‘white (i.e. clean) absenteeism’ in the Netherlands. Absence due to disorders with serious complaints but without disabling limitations, that clarifies degree of perceived limitations, are referred to as ‘grey (i.e. dim) absenteeism’ and calling in sick without the presence of medical complaints is referred to as ‘black (i.e. fraud) absenteeism’ [68].

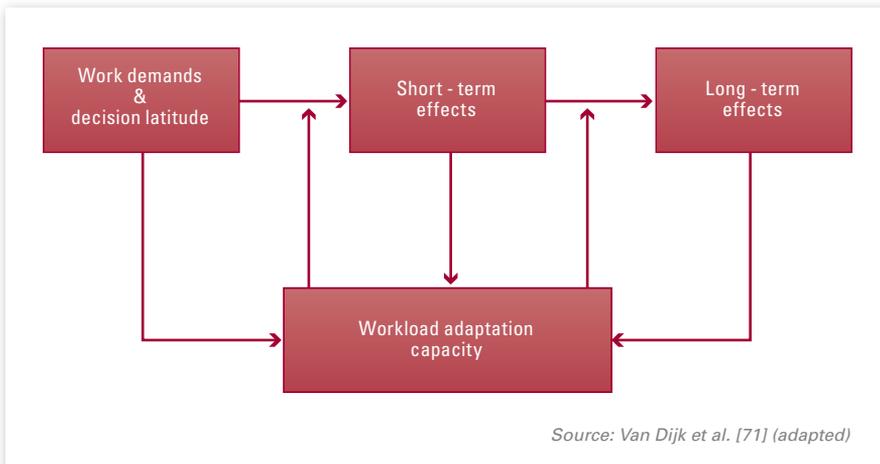
In 1994, Hopstaken [60] developed a decision-making model based on Azjen’s theory of planned behaviour. This model associates planned or intended behaviour with three factors: attitude, subjective social norms and perceived self-efficacy. The intended behaviour may not occur when barriers, i.e. unexpected elements outside the person are too high [59]. For instance, when you intend to call in sick but cannot reach your supervisor or colleague, you may decide to go to work. Hop-



According to the theory, attendance requirements motivate individuals to act as they should or ought to act in the context of perceived environmental conditions and consequences of being absent. Attendance incentives, on the other hand, motivate individuals to do what they want to do. A rationale for attending work is that work may fulfill human needs, such as stimulation, identity and meaningfulness [43]. These decision-making models of sickness absence correspond to each other. The attitude [60] can be seen as the threshold [58] to be absent, i.e. is sickness absence acceptable in a given situation? The subjective norm corresponds to the urgency to call in sick, i.e. what would the public opinion think about taking sick leave. Johansson combines these two themes in attendance and absence requirements. Self-efficacy [60] has some resemblance with what Johansson calls decision latitude and barriers [60] to what Johansson calls incentives.

#### 1.4.2 Workload – capacity model

The workload – capacity model focuses on the relation between work strain and an employee's work capacity. According to this model work strain and work capacity have to be in balance. If work strain exceeds an individual's physical or mental capabilities then symptoms and signs of overstrain occur [61]. The balance may be restored by: 1) reducing work performance, 2) taking sick leave, and 3) taking time off. Prolonged overstrain adversely affects an individual's daily functioning and results in sickness. Van Dijk et al. [71] adjusted the model and underlined the active role of the employee. Furthermore, the capacity to work was replaced by the capacity to adapt to workload. They also added decision latitude: the possibility to influence work strain (figure 10).



**FIGURE 10.** Model of workload and work capacity

In this model the scope is the working situation, which is characterized by work demands and the employee's decision latitude. Work demands (quality of work) can be differentiated in task contents, terms of employment, working conditions

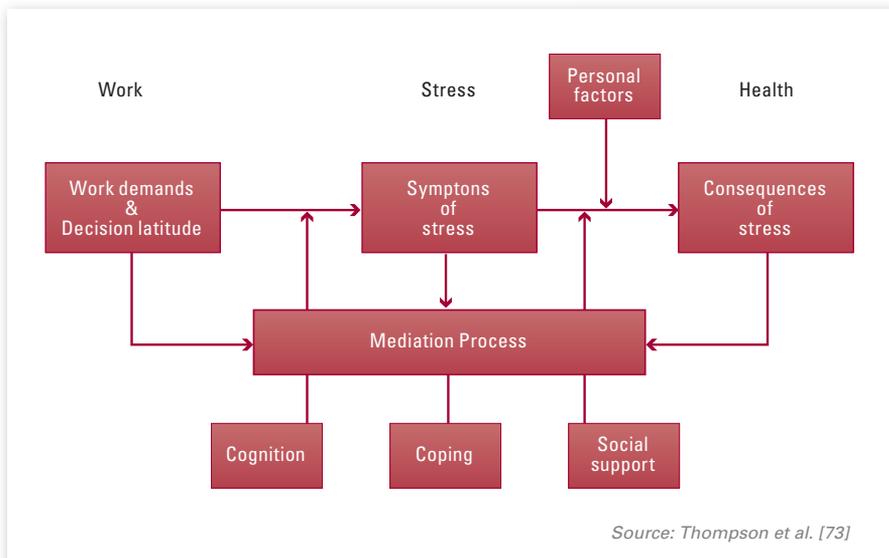
and social relationships at work. Decision latitude is the extent of autonomy and opportunities for the employee to change the working situation by means of altering the work demands. The work demands in combination with the work capacity (the total of all physical, cognitive and emotional characteristics of the employee) may result in short-term health effects and eventually in long-term health effects [72].

### 1.4.3 Work stress models

There are three important models that try to explain work stress: the work-stress-coping model, Karasek's demand-control-support model [63] Siegrist's effort-reward imbalance model [64].

#### 1.4.3.1 Work-Stress-Coping model

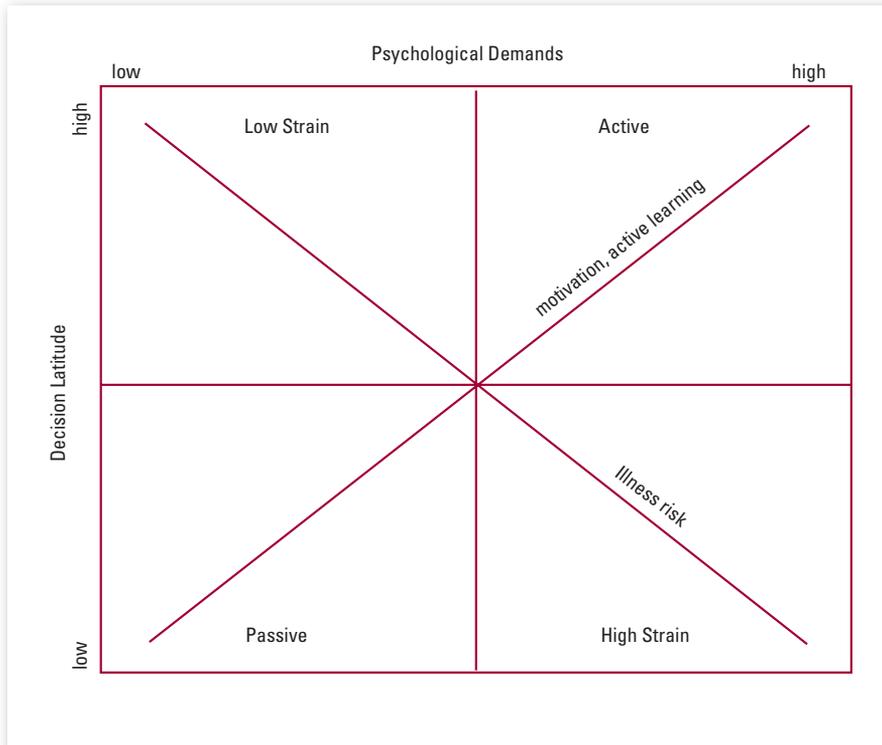
The Work-stress-coping model states that a combination of stressors, personal characteristics and social support causes strain. In work, the work demands and work latitude are important factors that can cause stressors for an employee. Stress signs and symptoms may develop when external stress exceeds the ability of the employee to cope with this stress with adverse health effects resulting in ill health. How a person deals with stress in a mediational process depends on the physical and mental characteristics, like cognition and coping, of the individual at a given moment. Social support, or the lack of it, is an important factor that influences the outcome in terms of health consequences of stress (see figure 11).



**FIGURE 11. Work stress/stress coping model**

### 1.4.3.2 Demand-Control-Support model

The Demand/Control/Support (DCS-) model [63,74,75] is often used to describe psychosocial work conditions. The DCS-model characterizes work by a combination of job demands, job control and job support. According to this model, job control provides resources to deal with the demands. It is assumed that the combination of high demands and low control results in psychological stress reactions. Job support received from supervisors and co-workers buffers the impact of job demands [74,76]. The DCS-model postulates that potential adverse health effects of demanding work can be counteracted by high levels of both job control and job support.



**FIGURE 12.** Demand control support model

The model divides jobs into 4 categories: passive jobs (low demands and low control), low strain jobs (low demands and high control), active jobs (high demands and high control), and high strain jobs (high demands and high control). High strain jobs pose the greatest illness risk for workers, and can lead to negative physical and psychological outcomes. The active learning hypothesis assumes that high levels of learning and self-efficacy will occur among individuals with high job demands/high job control jobs, whereas low levels of learning and self-efficacy

will be found in low demands/low control jobs. Connected to the type of job the following learning processes are found:

- In low control/high demands (or 'high strain') jobs high levels of strain and relatively low levels of learning are predicted because the individual cannot respond optimally to situational demands.
- In jobs with high job demands and high job control ('active' jobs), employees are able to deal with these demands, which may protect them from excessive strain and feelings of mastery may be the result [74].
- Individuals with low demand/low control jobs (or 'passive' jobs, referring to the presumed outcome of this particular work situation) will experience low levels of strain because the demands of the situation are low, in spite of the fact that those individuals have little opportunity to influence their work situation. Passive jobs are presumed to offer little opportunity for learning and personal development. According to Karasek, such jobs even lead to "negative learning", which is the gradual loss of previously acquired skills [77].
- Finally, low job demands and high job control jobs ('low strain' jobs, in terms of the presumed outcome) are expected to lead to low levels of strain because employees have plenty of possibilities to cope with situational demands. The levels of learning are moderate as the low job demands do not challenge employees to explore different ways of dealing with job demands, which is a requirement for learning [69, 78].

One of the criticisms of the DCS-model is that workers will respond differently to the same combination of demand and control conditions, and the DCS-model lacks a measure for inter-individual worker differences [79].

#### 1.4.3.3 Effort-Reward-Imbalance model

The Effort Reward Imbalance (ERI-) model is a social exchange theory emphasizing that the perception and evaluation of social exchange in relationships between workmates, employee and supervisor, as well as employee and organization determine successful functioning and health [64]. The ERI-model assumes that individuals will strive to maximize their outcomes (rewards) and minimize their inputs (efforts). Perceived imbalance in the work situation will occur if the extrinsic effort (time pressure, increasing demands and responsibility) that is spent during work does not correspond with the rewards in terms of monetary gratification, respect and support during work, as well as status, learning opportunities, and promotion prospects in work. Failed reciprocity between efforts and rewards elicits stress and, if sustained, results in adverse health outcomes. According to the ERI-model, a person who responds in an inflexible way to situations of high efforts and low rewards will be more stressed and disease-prone than a person in the same situation with flexible coping behaviour [64]. Hence, the ERI-model takes inter-individual differences into account. The ERI-model also predicts that effort-reward imbalance affects the well-being of employees who are unable to withdraw from work obligations more as compared to their less committed counterparts [80]. More precisely,

over-committed employees are likely to misjudge the balance between the efforts the work requires and the resources they have to cope with these efforts.

1.4.3.4 Job demands-resource model

The job demands-resource model (JD-R) (see figure 13) [81-83] is introduced as an alternative to the two influential job stress models, namely the demand-control model [63] and the effort-reward imbalance model [64]. The JD-R incorporates a wider range of working conditions, which makes this model more suitable for various job positions. At the heart of the JD-R model (see figure 13) lies the assumption that, although every occupation has its own specific risk factors associated with job stress, these factors can be classified in two general categories: job demands and job resources both referring to physical, psychological, social, or organizational aspects of the job. Job demands refer to those aspects that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs. Job resources refer to those aspects that are either or: functional in achieving work goals; reduce job demands and the associated physiological and psychological cost; stimulate personal growth, learning, and development. Instead of focusing on negative outcome variables (e.g., burnout, ill health, and repetitive strain), the JD-R model also includes positive indicators and outcomes of employee well being. Consistent with hypotheses derived from the JD-R model and the absenteeism literature Bakker et al. [82,83] showed that job demands are unique predictors of burnout (i.e., exhaustion and cynicism) and indirectly of absence duration, whereas job resources are unique predictors of organizational commitment, and indirectly of absence spells.

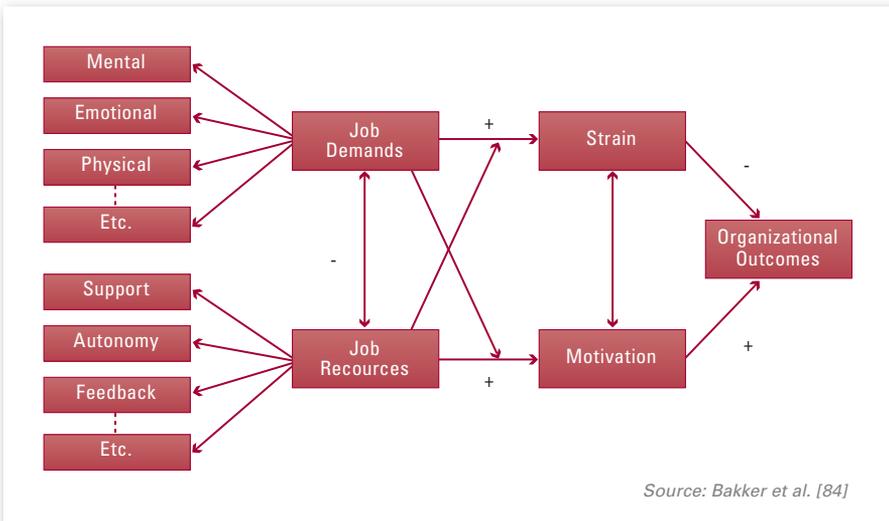


FIGURE 13. Job demands-resource model

### 1.4.4 Coping

Coping has been defined by Lazarus and Folkman [53] as cognitive and behavioral efforts made to master, tolerate, or reduce external and internal demands and conflicts. Three broad types of coping strategies are known: appraisal-focused coping; problem-focused coping and emotion-focused coping. Appraisal-focused strategies occur when the person modifies the way they think, for example: employing denial, or distancing oneself from the problem. People may alter the way they think about a problem by altering their goals and values, such as by seeing the humor in a situation. The procedure for problem-focused coping is quite similar to that used for problem solving: defining the problem, generating alternative solutions, and weighing the alternatives in terms of the costs and benefits. These problem-solving steps imply analytic processes that are aimed outward toward one's environment as well as those aimed inward toward one's values and beliefs. In contrast, emotion-focused coping focuses on lessening emotional distress and includes strategies such as avoidance, minimalization, distancing, selective attention, positive comparisons, and deriving positive values from negative events [53,85,86].

### 1.4.5 Readiness

Many employees still hold the opinion that activities and work may have adverse health effects in the sense that it aggravates pain and other symptoms. This belief results in the avoidance of physical and social activities, also known as fear avoidance behaviour. The ability and willingness of employees to cope with their health problems and handle their work can be recognized by using the concept of readiness, that originates from the theory of situational leadership [87]. The key components of readiness are the ability and willingness to accomplish a given task. "Ability is the knowledge, experience, and skill that an individual or group brings to a particular task or activity" [87]. Willingness, can be defined as "the extent to which an individual or group has the confidence, commitment, and motivation to accomplish a specific task" [87]. Both, ability and willingness, determine the extent to which a person will perform a given task, such as returning to work after illness.

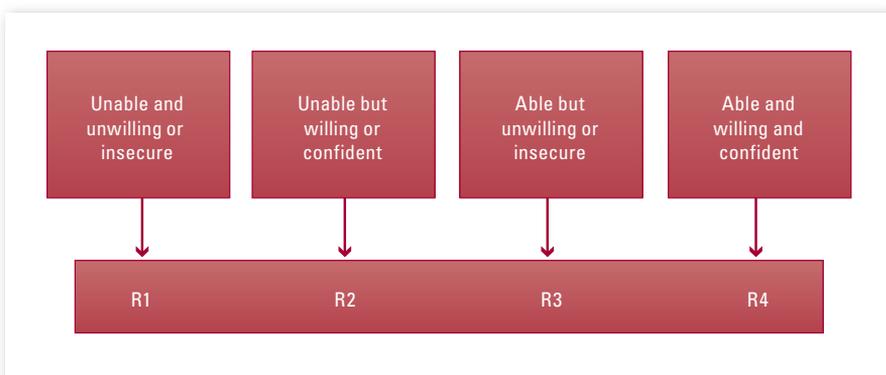


FIGURE 14. Readiness levels; modification of Hersey & Blanchard [87]

Readiness can be understood as a continuum [88] (see figure 14) divided into four readiness levels:

- Level 1 (R1): the employee is unable and unwilling to perform the task and lacks motivation and confidence;
- Level 2 (R2): the employee is unable but willing and confident to perform the task as long as guidance is provided;
- Level 3 (R3): the employee is able but unwilling and insecure to perform the task;
- Level 4 (R4): the employee is both willing and able to accomplish the task.

#### 1.4.6 Positive psychological capacities

Positive psychological capacities (PPC) tend to make involuntary absence 'less involuntary' meaning they give individuals influence on their sickness absence. PPC are the base of positive organizational behaviour [89] and include resilience [90, 91], optimism [92], self-efficacy [69], and hope [93]. These capacities are generally related to positive health outcomes and absence behaviours of employees [28]. An important feature is that these capacities can be developed [94], which provides opportunities to manage sickness absence.

#### 1.4.7 Team culture and positive organization behaviour

Teams influence sickness absence. Research on social influence is characterized by a recurrent debate about whether influence exerted within groups is primarily an interpersonal phenomenon, e.g. brought about through attraction or interdependence [95], or whether it is better explained by social identity-related factors such as group norms [96,97]. Research on individual absence showed already that sickness absence is affected to varying degrees by the collective behaviours of others. Employees learn through their interactions with other group or organizational members, how much absence is expected by co-workers and management, and individual members may experience social pressure to raise or lower their level of personal absence to a norm, established in the work group or the organizational culture [98,99]. Positive Organization Behaviour (POB) is faced towards performance improvement like positive health outcomes and sickness absence. POB studies and applicates positively oriented human resource strengths and PPC by measurement, development, and effective management [28,89,100].

## 1.5 The employer: leadership and sickness absence management

### 1.5.1 Leadership

There are numerous definitions and typologies of leadership. In this study, we defined leadership as the process of influencing the activities of an individual or a group in efforts to a goal achievement in a given situation [101].

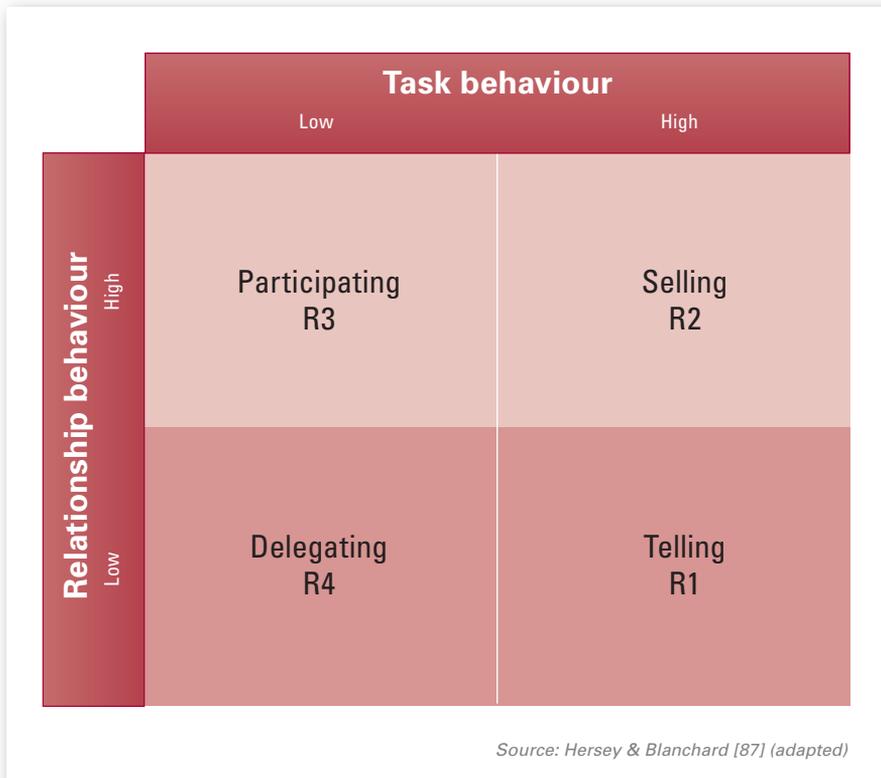
### 1.5.2 Leadership theories

A couple of theories dominate in the field of leadership research. Particularly the theories on transactional leadership, transformational leadership and situational leadership. Transactional leaders are interested in looking out for oneself, having exchange benefits with their employees, and clarifying a sense of duty with rewards and punishments to reach goals [102,103]. Transactional leaders are extrinsic motivators that bring minimal compliance from followers. They accept goals, structure, and the culture of the existing organization and tend to be directive and action-oriented. A transformational leader reaches goals by “transforming” employees to help each other, to look out for each other, to be encouraging and harmonious, and to look out for the organization as a whole. Authentic leaders show openness, trustworthiness, and reliability. Bass [103] also suggested that there were four different components of transformational leadership:

- **Intellectual Stimulation:** transformational leaders not only challenge the status quo but also encourage creativity among followers to explore new ways of doing things and new opportunities to learn.
- **Individualized Consideration:** transformational leaders involve in offering support and encouragement to individual followers. In order to foster supportive relationships, keeping lines of communication open so that followers feel free to share ideas and so that leaders can offer direct recognition of each follower’s unique contributions.
- **Inspirational Motivation:** transformational leaders have a clear vision that leaders are able to articulate to followers and to help followers experience the same passion and motivation to fulfill these goals.
- **Idealized Influence:** transformational leaders serve as a role model for followers. Because followers trust and respect the leader, they emulate the leader and internalize his or her ideals [103].

### 1.5.3 Theory of situational leadership

For this study the situational leadership theory of Hersey et al.[87] serves as the theoretical framework. Based on the dimensions relationship and task, four leadership styles are recognized, as is shown in figure 15: high, relationship–high task behaviour (selling style), high relationship–low task behaviour (participating style), low relationship–high task behaviour (telling style), and low relationship–low task behaviour (delegating style). There is no single leadership style that is appropriate in all managerial situations. An effective leader is one who can adapt his or her leadership style to meet the readiness level of employees [104].



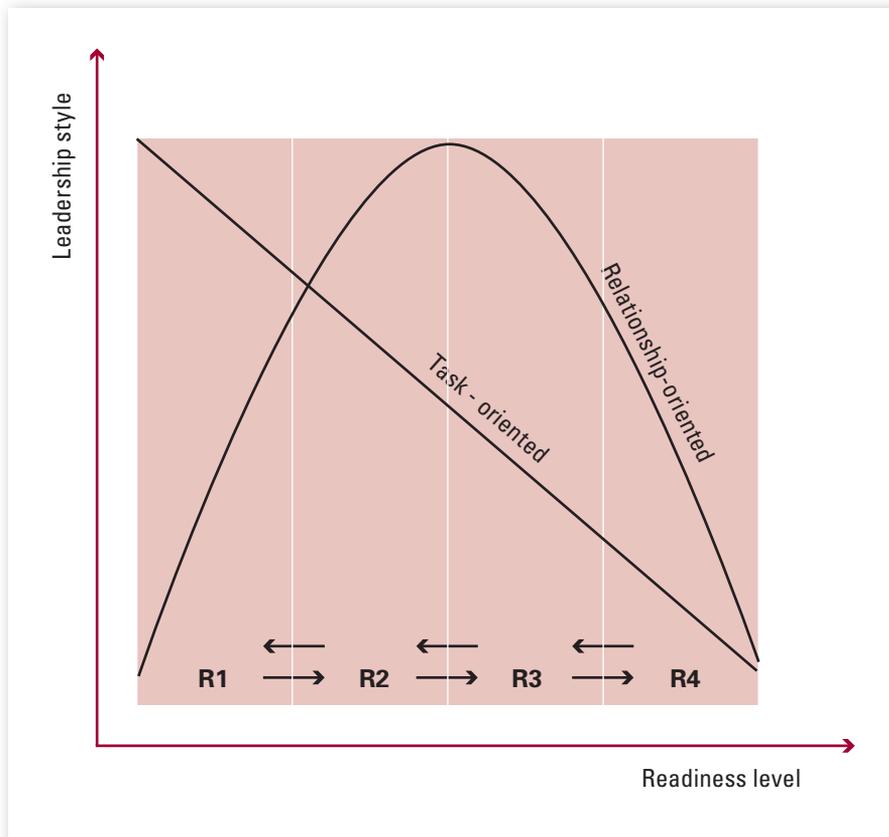
**FIGURE 15. Model of situational leadership**

- Telling style: low relationship–high task behaviour is appropriate when the employee is in the lowest level of Readiness: R1;
- Selling style: high relationship–high task behaviour is appropriate when the employee is in the second level of Readiness: R2;
- Participating style: high relationship–low task behaviour is appropriate when the employee is in the third level of Readiness: R3;
- Delegating style: low relationship–low task behaviour is appropriate when the employee is in the highest level of Readiness: R4.

#### 1.5.4 Sickness absence management and situational leadership

Employers have an influence on sickness absence, for example by adjusting the type of work, working conditions and work environment, and adherence to organizational policies and practices. Effective leaders adjust their leadership style to the readiness or maturity levels of employees or teams [105]. The manager who is aware of the readiness level of sick-listed employees and recognizes individual work capacities may provide comfort and understanding [106]. In addition, the employee's willingness to work as discussed by Hersey and Johnson [107] can be

stimulated by the choice of the appropriate leadership style. In this process the OP can prescribe mild to moderate activities to increase an employee's self-efficacy, which is one's confidence in resuming daily activities including work. If such recommendations fail to improve the readiness level, then the OP may consider referral to rehabilitating interventions that guide the employee in his/her steps towards a higher readiness level and towards return to work. Apart from advising the employee, the OP can advise the manager on the type of leadership behaviour that is appropriate with regard to the readiness level of the employee, instead of relying on the leadership style that suits the manager best. It should be noted that the Situational Leadership Model of Hersey & Blanchard is both a development and a regression model [108]. Individuals may progress to higher stages or regress to lower stages of readiness, and the manager should adapt his or her leadership style to these changes in readiness (figure 16).



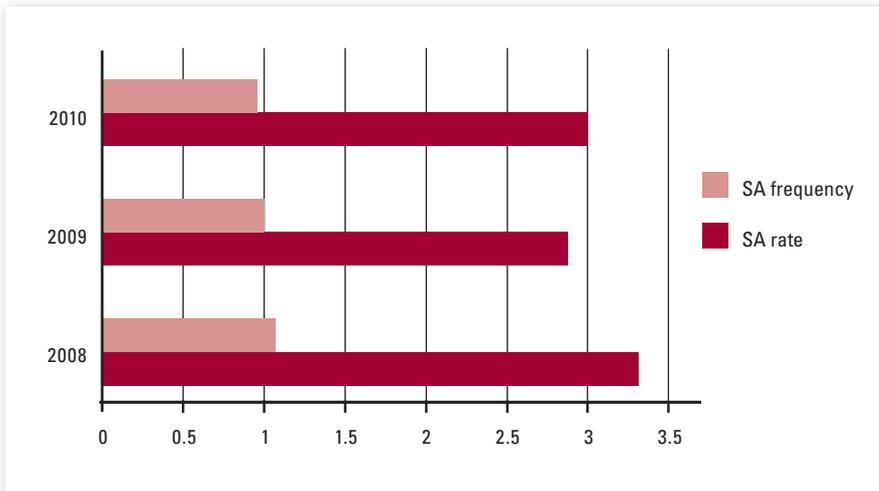
**FIGURE 16.** The movement of an employee in between readiness-levels when developing takes place or regression when confronted with illness or restrictions

## 1.6 This thesis

The coping of employees with sickness absence and the management of sickness absence by supervisors are the main themes of this thesis. The different frameworks used in this research are the Work-Stress-Coping model [65,66], Demand-Control-Support model [63], the Effort-Reward-Imbalance model [64], the Situational Leadership model [87] and the model of Planned Behaviour [59,60].

### 1.6.1 Study population

The study was performed in the period January 2008 to December 2010 in a convenience sample of employees working at Nij Smellinghe Hospital in Drachten. The hospital staffs 1053 employees with a temporary or permanent contract of whom 807 (77%) worked in patient-care in one of the clinical and outpatient wards; 764 (95%) were women with a mean age of 41 years (range 18-63 years) and 43 (5%) were men with a mean age of 46 years (range 25-64 years). A total of 144 (14%) worked in the paramedical wards such as physiotherapy, radiology, laboratory and pharmacy, of whom 111 (77%) were women with a mean age of 45 years (range 18-59 years) and 32 (23%) were men with a mean age of 40 years (range 19-62 years). The sickness absence data of these employees were retrieved from the Human Resources department of Nij Smellinghe Hospital. During the study, Nij Smellinghe's sickness absence percentage was stable at 3.2%, while the sickness absence frequency declined from 1.06 times per employee in 2008 to 0.98 times per employee in 2010 (figure 17). The OP was the same person during the whole study period and the 5 years preceding the study.



**FIGURE 17.** Development of sickness absence rates (SA rate) and –frequency (SA frequency) during the research period, Nij Smellinghe Hospital

### 1.6.2 Aims and objectives

The overall aim of the thesis was to study sickness absence behaviour and managerial leadership in relation to sickness absence, with special attention for the frequency, i.e. the number of episodes of sickness absence, and for zero-absenteeism.

#### Specific objectives

- To study the factors associated with the sickness absence frequency among nurses (chapter 2 & 3);
- To study coping styles in relation to short-term and long term sickness absence (chapter 4 & 5);
- To study the OP-rating of an employee's readiness to return to work (chapter 6);
- To study the relationship between leadership and sickness absence (chapter 7, 8 & 9);
- To explore the factors associated with zero-absenteeism (chapter 10 & 11).

### 1.6.3 Outline of the thesis

In this thesis, ten studies are presented; eight are quantitative studies and two (chapter 10 & 11) are qualitative in nature. **Chapter 2** presents the cross-sectional associations between the frequency of sickness absence and self-reported perceptions of health and work. **Chapter 3** discusses the cross-sectional associations between effort-reward imbalance and sickness absence among nurses. **Chapter 4** reports the results of a comparative study on health, working conditions and coping styles of Norwegian and Dutch hospital nurses. **Chapter 5** presents the prospective associations between nurses' coping styles at baseline and sickness absence during 1-year follow-up. **Chapter 6** describes the inter-OP agreement on intuitive ratings of an employee's readiness in terms of ability and willingness to return to work. **Chapter 7** deals with the prospective associations between the leadership styles of the theory of situational leadership and registered sickness absence. **Chapter 8** presents the prospective associations between nurse manager's leadership effectiveness and sickness absence among the nursing staff and **chapter 9** discusses the effects of managerial reorganization on staff sickness absence in a controlled before – after design. **Chapter 10** reports the results of qualitative interview and focus group data on factors associated with zero-absenteeism and **Chapter 11** presents how zero-absentees value sickness absence behaviour within their team. The final **chapter 12** is a general discussion that integrates the results of all studies and provides practical implications of the results.

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# Sickness absence frequency among women working in hospital care

Published in: Occupational Medicine 2009; 59: 502–505

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## ABSTRACT

**Background:** Frequent short sickness absences result in understaffing and interfere with work processes. We need more knowledge about factors associated with this type of absence.

**Purpose:** To investigate associations between the frequency of previous sickness absence and self-reported perceptions of health and work.

**Methods:** Cross-sectional study of female hospital care workers in which health, work characteristics and coping styles were assessed by questionnaire and linked to the number of sickness absence episodes recorded in the preceding 5-years using negative binomial regression analysis for counts distinguishing between short (1-7 days) episodes and long (> 7 days) episodes of absence after adjusting for age and duration of employment in December 2007 and hours worked between 2003 and 2007.

**Results:** Of 350 women employed for at least 5 years, 237 (68%) answered the questionnaire. The hours worked over the 5 year period (rate ratio [RR]=1.2) and problem-solving coping style score (RR=1.1) were positively associated with the number of short sickness absence episodes. Age (RR=0.8) and good general health (RR=0.7) were inversely related to the number of both short and long sickness absence episodes. Self-reported mental health and work characteristics were not shown to be related to the frequency of sickness absence.

**Conclusions:** Hours worked, problem-solving coping style, age and general health showed associations with the frequency of previous sickness absence among women who had worked at least 5 years in health care. Future prospective studies on the frequency of sickness absence should consider the impact of these factors further.

## INTRODUCTION

Sickness absence research has concentrated on long-term absence and disability because of high social and economic costs. Short-term sickness absence is not as costly, but when frequent results in understaffing and interferes with work time tables. Frequent short sickness absences are often interpreted as 'voluntary absence' or as a coping behaviour [1]. Moreover, employees who have frequent short episodes of sickness absence are at increased risk of future long-term absence [2]. More knowledge is needed about factors associated with this type of sickness absence.

## METHOD

This cross-sectional study linked questionnaire results on self-reported perceptions of health and work among women working in hospital care to the number of previous sickness absence episodes. When employees take sick-leave the sick report is sent electronically to the occupational health registry on the first day of absence and a recovery date is sent on the day work was resumed. In the Netherlands, sickness absence is medically certified by an occupational physician utmost in the fifth week of absence; shorter episodes are self-certified. Sickness absence episodes registered between 1 January 2003 and 31 December 2007 were counted for each employee distinguishing between short (1 to 7 days) and long (> 7 days) episodes of sickness absence. Ethical approval was sought from the Medical Ethics Committee of the University Medical Center Groningen, who advised that ethical approval was not required for this study. All employees agreed to the use of their sickness absence data and questionnaire results for scientific analysis on group level.

The questionnaires were distributed by the Human Resources department and returned by post to ArboNed Occupational Health Services in December 2007. General health and mental health scales were retrieved from the Short Form-20 [3]. Higher scores indicate better health. Job demands, control, and support were measured using the 10-item short form derived from the Dutch Job Content Questionnaire [4]. High scores correspond to high demands, control and support at work. Work efforts, rewards and overcommitment (i.e. the inability to withdraw from work obligations) were assessed by the Dutch Effort Reward Imbalance Questionnaire [5] with high scores corresponding to high efforts, rewards and overcommitment. Coping styles were assessed using the 19-item version of the Utrecht Coping List [6].

All scores were expressed as percentages of the maximum score possible for each subscale. The two general health subscales of the SF-20 were highly inter-correlated resulting in collinearity. The overall rating of health (US style) on a 5-point Likert-type scale ranging from 0 (bad) to 4 (excellent) is most widely used. Therefore this scale was included in a negative binomial regression model [7] together with mental health, job demands, control, support, work efforts, rewards, overcommitment, and coping styles. Age and duration of employment in December 2007 were added

as covariates to the regression model together with the hours worked between 2003 and 2007. The results are presented in rate ratios (RR's) and their 95% confidence intervals (95% CI). We also calculated the Wald statistic to express the strength and variability of associations in one measure.

## RESULTS

The characteristics of the 350 women who were employed for at least 5 years in December 2007 are presented in Table 1; 237 (68%) of them returned their questionnaire. Their sickness absence characteristics did not differ from those of non-participants.

**TABLE 1. Characteristics of the 350 women employed for at least 5 years**

Number (column %) of occupations among participants and non-participants in the study population and their mean (standard deviation: SD) of age, duration of employment, and mean number of hours worked. The table also shows sickness absence days and episodes in the period 2003 to 2007 as well as their distribution among the employees (column %).

	Participant	Non-participant	Mann Whitney U
<b>N</b>	237	113	
<b>Occupation</b>			
Administrator	30 (13%)	7 (6%)	
Nurse	190 (80%)	87 (77%)	
Nurses' aide	14 (6%)	14 (12%)	
Other	3 (1%)	5 (4%)	
<b>Mean (SD) age in years in 2007</b>	43.1 (8.3)	42.9 (9.6)	p=0.76
<b>Mean (SD) years employed in 2007</b>	15.6 (7.3)	15.3 (8.0)	p=0.61
<b>Mean (SD) hours worked from 2003 to 2007</b>	3479.5 (1315.5)	3103.5 (1495.0)	p=0.05
<b>Sickness absence data:</b>	<b>Days</b>		
	25,885	14,159	p=0.60
<b>Total sickness absence episodes</b>	1,512	771	p=0.52
Employees without episodes	20 (8%)	8 (7%)	
Employees 1 – 5 episodes	112 (47%)	52 (46%)	
Employees with 6 – 10 episodes	63 (27%)	25 (22%)	
Employees with 11 – 15 episodes	27 (11%)	17 (15%)	
Employees with >15 episodes	15 (6%)	11 (10%)	
<b>Number of short (1-7 days) episodes</b>	1,172	556	p=0.85
Employees without short episodes	31 (13%)	13 (12%)	
Employees with 1 – 5 short episodes	129 (54%)	58 (51%)	
Employees with 6 – 10 short episodes	51 (22%)	27 (24%)	
Employees with 11 – 15 short episodes	16 (7%)	11 (10%)	
Employees with > 15 short episodes	10 (4%)	4 (3%)	
<b>Number of long (&gt; 7 days) episodes</b>	340	217	p=0.13
Employees without long episodes	94 (40%)	43 (38%)	
Employees with 1 long episode	63 (27%)	20 (18%)	
Employees with 2 long episodes	31(13%)	13 (12%)	
Employees with 3 long episodes	18 (8%)	12 (11%)	
Employees with 4 long episodes	14 (6%)	12 (11%)	
Employees with 5 long episodes	17 (6%)	13 (11%)	

The hours worked during the 5-year period showed a positive relationship with the sickness absence frequency (Table 2). To a lesser extent, problem-solving coping was also positively associated. These relationships were specifically with short absence episodes. Age and good general health were inversely associated with the frequency of both short and long sickness absence episodes.

**TABLE 2. Factors associated with the frequency of sickness absence episodes**

Questionnaire scores and results of negative binomial regression analysis; the table shows RRs and their 95% CI as well as the Wald statistic calculated as  $(b/SE)^2$  in which estimate  $b$  reflects the strength of the observed associations and standard error (SE) the variability. \* $P < 0.05$ , \*\* $P < 0.01$ . CI, confidence interval.

	Questionnaire score	Total sickness absence episodes		Short sickness absence episodes		Long sickness absence episodes	
	Mean (SD)	RR (95% CI)	Wald	RR (95% CI)	Wald	RR (95% CI)	Wald
<b>Age (in years)<sup>a</sup></b>	43.1 (8.3)	0.8 (0.6 - 0.9)**	14.9	0.8 (0.6 - 0.9)**	12.5	0.7 (0.6 - 0.9)**	7.3
<b>Hours worked<sup>b</sup></b>	3479.5 (1315)	1.2 (1.1 - 1.2)**	41.1	1.2 (1.1 - 1.2)**	41.2	1.0 (1.0 - 1.2)**	7.9
<b>Years employed<sup>a</sup></b>	15.6 (7.3)	1.2 (1.0 - 1.4)	2.8	1.2 (1.0 - 1.4)*	4.2	1.0 (0.8 - 1.3)	0.0
<b>General health</b>	74 (20.2)	0.7 (0.6 - 0.8)**	18.0	0.7 (0.6 - 0.8)**	13.8	0.6 (0.5 - 0.8)**	13.5
<b>Mental health</b>	83 (14.8)	1.0 (1.0 - 1.0)	0.4	1.0 (1.0 - 1.0)	0.4	1.0 (1.0 - 1.0)	0.2
<b>Demands</b>	74 (16.2)	0.9 (0.9 - 1.0)	1.3	0.9 (0.8 - 1.0)	1.5	1.0 (0.8 - 1.1)	0.4
<b>Control</b>	75 (12.5)	1.1 (1.0 - 1.2)	1.8	1.1 (1.0 - 1.2)	1.6	1.1 (0.9 - 1.3)	0.7
<b>Support</b>	79 (11.5)	1.0 (0.9 - 1.0)	0.8	1.0 (0.9 - 1.0)	1.2	1.0 (1.0 - 1.1)	0.2
<b>Efforts</b>	71 (12.4)	1.0 (1.0 - 1.1)	0.0	1.0 (1.0 - 1.1)	0.1	1.0 (0.9 - 1.1)	0.0
<b>Rewards</b>	68 (13.0)	1.0 (0.9 - 1.0)	0.6	1.0 (0.9 - 1.0)	0.6	1.0 (0.9 - 1.0)	0.6
<b>Overcommitment</b>	49 (11.3)	1.0 (0.9 - 1.0)	1.8	1.0 (0.9 - 1.0)	2.4	1.0 (0.9 - 1.1)	0.4
<b>Coping style<sup>c</sup></b>							
-Problem-solving	69 (17.8)	1.1 (1.0 - 1.1)**	8.4	1.1 (1.0 - 1.1)**	6.9	1.1 (1.0 - 1.1)	3.1
-Seeking social support	54 (18.5)	1.0 (0.9 - 1.1)	0.0	1.0 (0.9 - 1.1)	0.0	1.0 (0.9 - 1.1)	0.1
-Showing emotions	54 (20.7)	1.0 (0.9 - 1.1)	0.2	1.0 (0.9 - 1.1)	0.0	1.1 (0.9 - 1.3)	1.7

<sup>a</sup>RRs show the effect of a 10-point increase on these scales.

<sup>b</sup>RR shows the effect of a 100-point increase in the mean hours worked.

<sup>c</sup>Palliative and avoidant coping scales were excluded because of their low reliability (Cronbach's  $\alpha = 0.54$  and  $\alpha = 0.38$ , respectively).

## DISCUSSION

Hours worked and problem-solving coping were positively associated with the frequency of sickness absence whereas both age and good general health were inversely related. Perceived work characteristics and overcommitment were not shown to be related to sickness absence frequency.

The study had a cross-sectional design precluding prospective associations and conclusions on causal relations. Moreover, the study was confined to women working long term in one organisation and it has been reported that there are differences in sickness absence practices and cultures between companies [8].

Age and general health were the variables consistently associated with all measures of sickness absence frequency. Mental health scores were not associated. Hanebuth et al. also failed to find an association between mental health and sickness absence [9]. Possibly, employees with mental health problems have been selected out of the population. Alternatively it may be easier for people to report poor health than feeling depressed or anxious.

As the number of hours worked was related to the frequency of short sickness absence episodes, it was unexpected to find no relationship with work characteristics. In a cross-sectional study of 1,726 Swedish dental clinic employees physical load, influence on work, and support at work significantly associated with overall sickness frequency [10]. It is possible that the associations between work characteristics and the frequency of sick-leaves were attenuated in our study by inter-individual variation or by sickness absence data measured over a 5-year period. It was also unexpected to find no relationship between sickness absence frequency and overcommitment as employees who find it difficult to withdraw from work obligations are likely to be at their work despite complaints.

Behavioural aspects are known to play a role in short term rather than long term sickness absence [1]. We found that problem-solving coping was positively associated with the frequency of short episodes. Problem-solving coping involves finding possible solutions to remove stressors and is observed in persons who are self-efficacious, persistent and assertive. The hospital from which the study population was recruited has a strict sick-leave policy in which reporting sick is managed directly. Possibly, the more assertive employees take sick-leave despite these strict policies.

Prospective studies are needed to develop effective policies that ensure prudent management of frequent sickness absence. Such studies should adjust for age, work hours, general health and coping styles.

## KEY POINTS

- This cross-sectional study showed that age and good general -but not mental- health
- were inversely associated with the frequency of previous short and long episodes of sickness absence among women working at least 5 years in health care.
- The number of hours worked and problem-solving coping styles were positively associated with the frequency of previous short sickness absence episodes.
- Prospective research to identify determinants of sickness absence frequency should include age, work hours, general health and coping styles.

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# Effort – reward imbalance is associated with the frequency of sickness absence among female hospital nurses: a cross sectional study

Published in: *International Journal of Nursing Studies* 2010; 47:  
569–576

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## ABSTRACT

**Background:** Most research on sickness absence among nurses has focused on long-term work disability. Absence from work due to short-term sickness is more common and frequent short absences result in understaffing and increased workload of nursing teams.

**Objectives:** To investigate health and work factors in relation to the frequency of short-term sickness absence among nurses.

**Design:** A cross-sectional study linking self-reported health and work factors to the frequency of registered sickness absence episodes in the preceding three years.

**Settings:** A regional hospital in the Dutch province Friesland employing 1,153 persons. **Participants:** 459 female nurses working at least three years in the clinical wards (n = 337) or the outpatient clinic (n = 122) of the hospital.

**Methods:** Perceived general health, mental health, demand/control (DC) ratio, workplace social support, effort/reward (ER) ratio, and over-commitment (i.e. the inability to withdraw from work obligations) were assessed by a self-administered questionnaire. The associations between the questionnaire results and the registered number of sickness absence episodes were analysed by negative binomial regression analysis, distinguishing between short (1-7 days) and long (>7 days) sickness absence episodes and controlling for age, hours worked, and duration of employment.

**Results:** 328 (71%) female nurses completed their questionnaires and of these 291 were eligible for analysis. High frequent absentees perceived poorer health, had lower over-commitment scores, and reported higher ER-ratios than low frequent absentees. Esteem rewards were related to sickness absence whereas monetary rewards were not. Feeling respect from the supervisor was associated with fewer short sickness absence episodes and respect from co-workers was associated with fewer long sickness absence episodes.

**Conclusions:** Effort – reward imbalance was associated with frequent short sickness absence episodes amongst nurses. Work efforts and rewards ought to be potentially considered when managing nurses who are frequently absent from work as these factors can be dealt with by managers.

## INTRODUCTION

In the past, sickness absence was considered a socioeconomic and political topic rather than a medical or public health matter. This changed when it was reported that high levels of sickness absence predicted future health outcomes, early retirement, and mortality [1-3]. Nowadays, sickness absence is seen as a major public health problem and sickness absence research is a top priority in Europe [4]. Research on sickness absence in health care has focused on long-term disability. Factors that increased the likelihood of long-term sickness absence among 2,293 Swedish nurses were working in geriatric care, being socially excluded by superiors and/or workmates, organizational changes, and poor self-rated general health [5].

Short-term sickness absence, however, is far more common [6] than the long-term type. Frequent short absence episodes result in understaffing and herewith influence nursing efficiency and effectiveness [7,8]. Staff shortages and the subsequent increase in workload also result in escalating levels of negative work stress in health care [9].

### Work stress models

Within the last decades, two main concepts modelling the adverse health effects of work stress were developed. The Demand – Control (DC) model characterizes work by a combination of job demands and job control. According to this model, job control provides resources to deal with the demands. It is assumed that the combination of high demands and low control results in psychological stress reactions [10]. Job support received from supervisors and co-workers was also found to buffer the impact of job demands [11]. Thus, the DC-model postulates that potential adverse health effects of demanding work can be counteracted by high levels of both job control and job support. Many studies have tested this hypothesis, but the results did not always support it [12]. One of the criticisms of the DC-model is that workers will respond differently to the same constellation of demand and control conditions, as the model lacks a measure for inter-individual worker differences [13]. The Effort – Reward Imbalance (ERI) model takes inter-individual differences into account [14]. According to the ERI-model, a person who responds in an inflexible way to situations of high efforts and low rewards will be more stressed and disease prone than a person in the same situation with flexible coping behaviour [15].

The ERI-model states that there should be a balance between what the employee gives ('effort') and what he or she receives ('reward'). Failed reciprocity between efforts and rewards elicits stress and, if sustained, results in adverse health outcomes. High efforts in combination with low rewards were reported to be associated with poor self-rated health of Danish nurses working in hospitals or in primary care [16]. Lavoie-Tremblay et al. [17] found that 43% of junior hospital nurses perceived an effort – reward imbalance and that they were more likely to report high levels of psychological distress.

The ERI-model also predicts that effort – reward imbalance affects the well-being of employees who are unable to withdraw from work obligations more as compared to their less committed counterparts [18]. More precisely, over-committed employees are likely to misjudge the balance between the efforts the work requires and the resources they have to cope with these efforts.

## The frequency of sickness absence

Although absenteeism is an expensive and difficult problem for society and work places, little is known about the sickness absence frequency. Large-scale European studies have reported on the prospective associations between psychosocial work environment and the number of short sickness absence episodes. In the British Whitehall II studies and the French GAZEL cohort studies, it was found that job demands were particularly associated with sickness absence episodes lasting 1 to 7 days [19,20]. Moreau et al. [21] followed 20,643 employees working in four Belgian companies for a year and found that working in jobs with combined high job demands, low control, and low support was associated with repetitive episodes of sickness absence.

In a study of 1,793 Canadian nurses, short-term sickness absence was also found to be associated with job strain in terms of high demands, low control, and low social support at work [22]. Kinship responsibility has been reported to be positively related to the number of sickness absence episodes among female nurses, but the weak relationship suggested that other factors may be more important with respect to the frequency of sickness absence [7].

Nurse managers need to know the factors associated with the frequency of short sickness absence episodes to develop policies that ensure a well-considered management of frequent absenteeism. Therefore, we investigated health and work perceptions of hospital nurses by questionnaire and linked the results to their sickness absence frequency registered in the preceding three years. We hypothesized that the factors of the ERI-model were differentially associated with short-term sickness absence as compared to those of the DC-model, as the ERI-model includes personal coping flexibility and short-term absenteeism is considered to be a type of coping behaviour [23-25].

## Study setting

In the Netherlands, employees report sick to their employer when they are too ill to attend work. The employer sends a sick report to the occupational health service on the first day of absence. When a sick-listed employee resumes work within the first two weeks of the first day of sickness absence, the employer reports the return to work date to the occupational health service. Such short episodes are registered,

but not medically certified. A sick-listed employee will usually visit an occupational health provider in the third week of sickness absence. The occupational health provider inquires into the medical symptoms, diagnosis, and treatment, as well as work-related factors and private problems that might hinder return to work. The occupational health provider determines whether the employee is work incapacitated and if so issues a medical sick-leave certificate. Medical, social, and vocational information are updated in follow-up assessments every four to six weeks and the occupational health provider motivates sick-listed employees to return to work as quickly as possible. Employers pay sickness absence benefits up to 100% of the employee's income for a maximum period of 2 years after which employees without work ability receive disability pension.

## SUBJECTS AND METHODS

### Study population and design

The study population consisted of nurses working at least three years in the clinical wards ( $n = 358$ ) or outpatient clinic ( $n = 122$ ) of a regional hospital in the Dutch province Friesland employing a total of 1,153 persons. Gender differences are well known in both work stress research and sickness absence research. Therefore, men and women must be analysed separately. The male group, however, was excluded for the further analyses due to a low number of male nurses ( $n = 21$ ) working in-hospital at the time of study. The 459 female nurses received a questionnaire from the human resources department of the hospital and were asked to return the completed questionnaire by post to the occupational health service. The self-administered questionnaire assessed eight dimensions: general health, mental health, job demands, job control, job support, work efforts, work rewards, and over-commitment. This cross-sectional study linked the questionnaire data to sickness absence registry data of an occupational health service, containing the first and last day of all sickness absence episodes lasting at least 1 day for each person in the three preceding years.

Approval was sought from the Medical Ethics Committee of the University Medical Center Groningen, who advised that ethical clearance was not required for this questionnaire survey. Study participants gave informed consent on linking the questionnaire scores to their registered sickness absence data.

### Study questionnaire

The SF-12 Health Survey, a short version of the SF-36, measures the physical and mental health-related quality of life [26]. General health was assessed using a single item asking for an overall rating of health on a 5-point Likert-type scale ranging from 0 (bad) to 4 (excellent), which is one of the most widely used general measures of health status [27,28]. Mental health was measured with the Mental Health

Inventory (MHI-5) subscale (Cronbach's  $\alpha$  in this study = 0.84) of the SF-12 Health Survey, consisting of 5 questions about mood and anxiety, which were scored on a 4-point Likert-type scale ranging from "always" to "never" [27]. The scores were expressed as percentages of the maximum score possible for each subscale and higher scores indicated better health.

Job demands, control, and support were assessed using 8 of the 10 items in the short form described by Storms et al. [29], which was derived from the Dutch Job Content Questionnaire; 2 items on job satisfaction and job insecurity were not included as factors of the DC-model. Job demands were measured with 4 items about handling heavy loads, toxic exposure, hazardous conditions, and having to work hard. Job control was measured with 2 items about skill discretion and decision latitude. Job support was measured with 2 items: a considerate supervisor and friendly co-workers. All items were scored on a 4-point Likert-type scale ranging from "strongly agree" to "strongly disagree". High scores correspond to high demands, control, and support. The demand/control ratio (DC-ratio) was calculated dividing the score on job demands by 2 times the score on job control. A high DC-ratio reflects work stress in terms of high demands and/or low control.

Work efforts and work rewards were assessed using the Dutch Effort Reward Imbalance Questionnaire [30]. The subscale extrinsic efforts consisted of 5 items (Cronbach's  $\alpha$  in this study = 0.70), referring to perceived work conditions such as workload, time pressure, and frequent interruptions, which were scored on a 4-point Likert-type scale ranging from "strongly agree" to "strongly disagree". The subscale rewards consisted of 5 items (Cronbach's  $\alpha$  in this study = 0.73) on esteem reward (4 items about respect from both supervisor and colleagues and educational opportunities) and monetary gratification (1 item) each measured with a 4-point Likert-type scale ranging from "strongly agree" to "strongly disagree". High scores on work efforts correspond to high efforts and high scores on rewards to high rewards. The effort/reward ratio (ER-ratio) was calculated dividing the score on work efforts by the score on work rewards. A high ER-ratio reflects work stress in terms of high efforts and/or low rewards.

We used the 5 items of the subscale inability to withdraw from work obligations (Cronbach's  $\alpha$  in this study = 0.76) of the Effort Reward Imbalance Questionnaire as a proxy for over-commitment [30]. These five items were "I get easily overwhelmed by time pressure at work", "I can easily relax and 'switch off' work at home", "I rarely let go of work", "Work is still on my mind when I go to bed", "As soon as I get up in the morning I start thinking about work problems", and "People close to me say I sacrifice too much for my job". All questionnaire scores were expressed as percentages of the maximum score possible for each subscale.

## Data analysis

Both short-term self-certified sickness absence and long-term medically certified sickness absence were registered by the occupational health service in number of absence episodes and duration for each person. The calendar days between the first and last day of sickness absence were regarded as sick days, irrespective of the actual working hours and regarding partial days off work as full sick days. We counted the total number of sick days of each employee between 1 January 2006 and 31 December 2008. The distribution of the number of sick days was positively skewed (mean = 61.7, SD = 112.5; median = 17) and normal distribution was approximated by log-transformation using the natural logarithm (mean 2.8, SD 1.8; median 2.9). The association of the log-transformed number of sick days with health and work characteristics was analysed using multiple linear regression analyses.

The frequency of sickness absence is usually assessed as the number of episodes absent. We counted the number of sickness absence episodes in the three years preceding completion of the questionnaire and distinguished between short episodes (1-7 days) and long episodes (>7 days) for each individual. The number of sickness absence episodes is a type of count data for which Poisson regression is commonly used. The Poisson model implies that the variance is equal to the mean ( $\mu$ ). However, we found considerable excess residual variation ('over-dispersion') for the rates of short sickness absence episodes when all investigated factors were taken into account. Therefore, the associations of health and work characteristics with the number of sickness absence episodes were investigated using negative binomial regression analysis, which is an alternative model for counts derived from the Poisson distribution by adding a quadratic term  $K(\mu)^2$  where  $K$  is the over-dispersion parameter [31]. The negative binomial model allows for variation due to factors not included in the model [32] and fitted our data better.

Age and duration of employment at the time the questionnaire was completed were retrieved from the human resources department of the hospital together with the number of hours worked during the three years preceding the study. These factors were added as covariates to all regression models. The significance level was set at 5%.

## RESULTS

Of the distributed 459 questionnaires, 328 were returned to the occupational health service resulting in a response rate of 71%. Table 1 shows the age, duration of employment, number of hours worked, and sickness absence characteristics of participating and non-participating female nurses, distinguishing between nurses working in-hospital (response rate 65%) and nurses working outpatient (response rate 90%). In-hospital participants worked more hours ( $P < 0.01$ ) than non-participants, but they did not differ in sickness absence characteristics.

**TABLE 1. Characteristics of the study population**

The table shows the characteristics of the study population consisting of 459 female nurses and the distribution of sickness absence among them, using non-parametric Mann-Whitney U test to compare participants with non-participants. SD = standard deviation.

	In-hospital		Mann-Whitney U test	Outpatient		Mann-Whitney U test
	Participants	Non-participants		Participants	Non-participants	
<b>N</b>	218	119		110	12	
<b>Mean (SD) age in years</b>	41.9 (9.0)	42.2 (9.9)	P = 0.77	40.2 (8.8)	40.2 (5.8)	P = 0.97
<b>Mean (SD) years employed</b>	14.1 (7.8)	13.7 (8.5)	P = 0.55	13.4 (8.4)	13.1 (8.1)	P = 0.85
<b>Mean (SD) hours worked</b>	2006 (887)	1494 (1045)	P < 0.01	2192 (778)	2250 (1008)	P = 0.69
<b>Mean (SD) sick days</b>	66.4 (108.0)	71.8 (117.5)	P = 0.92	56.5 (119.0)	44.0 (69.9)	P = 0.50
<b>Percentiles</b>						
25	5.00	2.00		12.00	9.25	
50	18.00	20.00		25.00	20.50	
75	79.25	107.00		49.00	63.00	
<b>Mean (SD) short episodes</b>	3.0 (3.4)	2.8 (2.9)	P = 0.80	3.9 (2.4)	3.7 (1.6)	P = 0.97
<b>Percentiles</b>						
25	1.00	1.00		2.00	2.00	
50	2.00	2.00		4.00	3.50	
75	4.00	4.00		6.00	5.25	
<b>Mean (SD) long episodes</b>	0.9 (1.3)	1.1 (1.5)	P = 0.22	0.9 (1.0)	1.0 (1.5)	P = 0.95
<b>Percentiles</b>						
25	0.00	0.00		0.00	0.00	
50	0.00	1.00		1.00	0.50	
75	1.00	2.00		1.00	1.75	

## Associations of sickness absence with general health and work

Age and general health were inversely associated with all sickness absence measures, as is shown in Table 2. The DC-ratio was inversely related to both the number of sick days ( $P=0.05$ ) and the number of short sickness absence episodes ( $P<0.01$ ). Workplace social support was positively associated ( $P=0.03$ ) with the number of long sickness absence episodes. The ER-ratio was positively related to the number of short sickness absence episodes ( $P<0.01$ ) and over-commitment inversely ( $P=0.02$ ).

**TABLE 2. General health, work characteristics, and sickness absence**

The table shows the regression coefficients (B) of multiple regression analysis of log-transformed sick days and their 95% confidence intervals (CI), as well as the rate ratios (RR) of negative binomial analysis of short and long sickness absence episodes and their 95% CI; \*  $p < 0.05$  and \*\*  $p < 0.01$ . SD = standard deviation; DC-ratio = demand/control ratio; ER-ratio = effort/reward ratio.

	Mean (SD)	Sickness absence days	Short episodes	Long episodes
		B (95% CI)	RR (95% CI)	RR (95% CI)
<b>Age<sup>a</sup></b>	41.4 (8.9)	-0.27 (-0.52 to -.03)*	0.81 (0.71 to 0.93)**	0.73 (0.57 to 0.93)*
<b>Hours worked<sup>b</sup></b>	2066.4 (853.2)	0.74 (-0.06 to 1.55)	4.11 (3.06 to 5.53)**	0.62 (0.30 to 1.27)
<b>Years employed<sup>a</sup></b>	13.8 (7.9)	0.15 (-0.13 to 0.43)	1.11 (0.96 to 1.29)	1.13 (0.86 to 1.49)
<b>Ward (in-hospital / outpatient)</b>	82% / 18%	-0.19 (-0.75 to 0.38)	0.85 (0.65 to 1.13)	1.39 (0.79 to 2.44)
<b>General health</b>	79.9 (14.7)	-0.39 (-0.72 to -0.06)*	0.73 (0.61 to 0.87)**	0.68 (0.50 to 0.93)*
<b>DC-ratio</b>	1.0 (0.3)	-0.85 (-1.70 to -0.01)*	0.58 (0.36 to 0.92)*	0.81 (0.35 to 1.84)
<b>Support</b>	75.0 (15.0)	0.12 (-0.09 to 0.32)	1.03 (0.93 to 1.15)	1.24 (1.03 to 1.50)*
<b>ER-ratio</b>	1.0 (0.3)	0.40 (-0.30 to 1.10)	1.65 (1.16 to 2.34)**	0.95 (0.45 to 2.04)
<b>Over-commitment</b>	49.1 (11.3)	-0.07 (-0.16 to 0.02)	0.95 (0.90 to 0.99)*	0.96 (0.88 to 1.04)

<sup>a</sup> the regression coefficient and rate ratios show the effect of a 10-year increase of the variable

<sup>b</sup> the regression coefficient and rate ratios show the effect of a 100 hour increase of the hours worked

## Associations of sickness absence with mental health and work

Depressive symptoms, measured with 2 items of the MHI-5, were positively associated with the number of short sickness absence episodes, which means that nurses who sometimes or regularly feel depressed have more short sickness absence episodes than those who never feel depressed (Table 3). Mental health was neither associated with the number of sick days nor with the number of long sickness absence episodes. The other associations were in agreement with the regression model based on general health with the exception that the relationship with over-commitment was not significant ( $P=0.14$ ).

**TABLE 3. Mental health, work characteristics, and sickness absence**

The table shows the regression coefficients (B) of multiple regression analysis of log-transformed sick days and their 95% confidence intervals (CI), as well as the rate ratios (RR) of negative binomial analysis of short and long sickness absence episodes and their 95% CI; \*  $p < 0.05$  and \*\*  $p < 0.01$ . DC-ratio = demand/control ratio; ER-ratio = effort/reward ratio.

	Sickness absence days	Short episodes	Long episodes
	B (95% CI)	RR (95% CI)	RR (95% CI)
Age <sup>a</sup>	-0.25 (-0.51 to 0.00)*	0.82 (0.71 to 0.93)**	0.73 (0.57 to 0.93)*
Hours worked <sup>b</sup>	0.74 (-0.08 to 1.55)	4.35 (2.77 to 6.83)**	0.59 (0.29 to 1.21)
Years employed <sup>a</sup>	0.11 (-0.17 to 0.40)	1.07 (0.92 to 1.25)	1.13 (0.85 to 1.51)
Ward (in-hospital / outpatient)	-0.13 (-0.70 to 0.45)	0.89 (0.67 to 1.18)	1.36 (0.78 to 2.40)
Mental Health Inventory			
Nervous <sup>c</sup>	0.01 (-0.45 to 0.47)	0.97 (0.76 to 1.23)	0.92 (0.60 to 1.40)
Happy <sup>d</sup>	0.12 (-0.36 to 0.59)	1.07 (0.84 to 1.37)	1.17 (0.75 to 1.83)
Calm <sup>d</sup>	-0.26 (-0.75 to 0.22)	0.93 (0.73 to 1.19)	1.02 (0.65 to 1.60)
Depressive <sup>c</sup>	0.43 (-0.11 to 0.97)	1.36 (1.04 to 1.79)*	1.08 (0.66 to 1.75)
DC-ratio	-1.00 (-1.85 to -0.16)*	0.51 (0.32 to 0.82)**	0.73 (0.33 to 1.64)
Support	0.10 (-0.11 to 0.31)	1.02 (0.91 to 1.13)	1.25 (1.03 to 1.52)*
ER-ratio	0.33 (-0.39 to 1.04)	1.55 (1.08 to 2.22)*	0.95 (0.45 to 2.02)
Over-commitment	-0.04 (-0.14 to 0.05)	0.96 (0.92 to 1.01)	0.97 (0.89 to 1.06)

<sup>a</sup> the regression coefficient and rate ratios show the effect of a 10-year increase of the variable

<sup>b</sup> the regression coefficient and rate ratios show the effect of a 100 hour increase of the hours worked

<sup>c</sup> always, regularly, sometimes relative to never

<sup>d</sup> never, sometimes, regularly relative to always

### Associations of sickness absence with separate efforts and rewards

When analysed separately, the effort 'working overtime' was positively associated with the number of sick days (regression coefficient (B)=0.71; 95% confidence interval [CI] 0.13 to 1.30;  $P=0.02$ ) and the reward 'receive respect from supervisor' inversely ( $B= -0.67$ ; 95% CI  $-1.33$  to  $-0.01$ ;  $P=0.05$ ). Respect received from the supervisor was also inversely related to the number of short sickness absence episodes (RR=0.51; 95% CI 0.28 to 0.92;  $P=0.03$ ), whereas respect from co-workers was inversely related to the number of long sickness absence episodes (rate ratio [RR]=0.70; 95% CI 0.51 to 0.95;  $P=0.02$ ). The other effort and reward items were not associated with sickness absence.

## DISCUSSION

Our study showed that the frequency of sickness absence increased with the number of hours worked and that good health was associated with low sickness absence. The study adds that employees who are frequently absent report lower DC-ratios and higher ER-ratios than those with few sickness absence episodes. High frequent absentees also had lower over-commitment scores.

### Strengths and weaknesses of the study

The strength of our study is that we used registered sickness absence data instead of self-reported sickness absence and we had complete sickness absence data over a 3-year period. All employees were nurses and comparable with regard to working conditions, work environment, and organizational policies. This is important because recurrent changes in working conditions and policies were found to be associated with job distress among nurses [33].

The major limitation of the study is its cross-sectional design precluding prospective associations and causal relations. Also, the women in our study population were working in the hospital for at least three years and may be a selection of women who are healthy and enjoy their work. It should also be noted that questionnaire results may be distorted by response styles and personality characteristics. We tried to take this weakness into account by using validated instruments in the questionnaire. Furthermore, the questionnaires were not anonymous, which may have biased the responses. We tried to minimize the effect of this by asking the respondents to return their questionnaire to the occupational health service instead of their employer.

Finally, information about family life was not available. A poor balance between work and family obligations may lead to an elevated risk of ill health [34,35] or at least an increased need for absence from work [7,36,37].

### Work stress and sickness absence frequency

The Demand – Control (DC) model focuses on the quantity of exposure to working conditions and the relieving effects of job control and support, whereas the Effort – Reward Imbalance (ERI) model also takes an individual's coping flexibility into account. As short-term absenteeism is regarded as a coping behaviour, we expected the ER-ratio to be differently associated with the number of short-term sickness absence episodes than the DC-ratio, which was confirmed by the results.

A high DC-ratio was associated with fewer sick days and fewer short sickness absence episodes. The British Whitehall II study has shown that high job demands were associated with fewer short episodes of sickness absence in men (RR=0.75; 95% CI 0.69 to 0.80), but not in women (RR=0.93; 95% CI 0.84 to 1.03). Our findings contradict the results of Melchior et al. [20] and Moreau et al. [21] who reported that high job demands were associated with more sickness absence episodes among French blue collar and Belgian white collar workers, respectively. These different results may be due to vocational factors. Employees working in health care are known to feel a special responsibility and attendance-pressure to go ill to work, because other people depend on their care [38].

A high ER-ratio was associated with more short episodes of sickness absence. Similar findings have been reported in a previous study of nurses where poor self-rated health was observed among nursing staff characterized by high efforts in combination with low rewards [16,39,40]. Also, another study has shown that ER-ratios above 1 were associated with an increased risk of adverse health effects, because the efforts made were not counterbalanced by sufficient rewards [41]. These studies together support a causal relationship between effort – reward imbalance and poor health among nurses.

Besides adverse health effects, poor well-being has been reported to be associated with high efforts and low rewards [15,17,42]. Well-being is an umbrella term for different valuations that people make regarding their lives, the events happening to them, and the circumstances in which they live and work [43,44]. When effort – reward imbalance is associated with both poor well-being and frequent short sickness absence episodes, the frequency of sickness absence might be a sign of poor well-being. Esteem rewards such as feeling respected by supervisor and co-workers were significantly associated with the sickness absence frequency. Respect from the supervisor was associated with fewer short sickness absence episodes and respect from by co-workers was related to fewer long sickness absence episodes. Possibly, feeling respected at work is an important facet of a person's well-being. This may explain the results of De Jonge et al. [42], who found that work efforts and rewards were stronger predictors of poor well-being than job demands and control. After all, the DC-model does not include respect felt at work. Respect from co-workers may explain why sickness absence levels are lower in wards with team nursing as compared to wards with primary nursing [24]. We assume that employees who experience poor respect at work may find it easier to report sick when not in optimal health. This hypothesis, however, remains to be tested in prospective studies.

## Over-commitment and sickness absence frequency

We found that low frequent absentees had higher over-commitment scores than high frequent absentees. Over-committed employees who find it difficult to withdraw from work obligations are likely to be present at work even when sick, which is known as sickness presence [46]. The highest sickness presence levels are found in the care, welfare, and education sectors where employees are responsible for others [38]. Over-commitment and the responsibility in caring for others can give the feeling that work is demanding, which may explain the finding that high DC-ratios were associated with fewer short sickness absence episodes. Earlier, it was reported that sickness presence levels amongst workers in Nordic elderly care rose more sharply with increasing levels of job stress than sickness absence levels [47]. It would be interesting to study the relationship between over-commitment and sickness presence among nurses, as it has recently been reported that sickness presence leads to sickness absence on the long term [48]. If over-committed nurses are prone to be sickness present, then they may be recognized as a risk group that needs special attention to prevent sickness absence.

## CONCLUSIONS AND PRACTICAL IMPLICATIONS

Frequent short episodes of sickness absence are associated with poor general health, effort – reward imbalance and less commitment to work. When women are frequently absent, the occupational health provider should not only look for signs of chronic disease, but also inquire about work efforts and rewards, respect experienced at the workplace, and work-related well-being. Understanding the relationship between the work environment and the health status of nurses is imperative for creating interventions to successfully recruit and retain them at work. Future research should investigate the prospective relationships of efforts, rewards and commitment to work with the frequency of sickness absence to develop effective sickness policies that ensure well-considered management of absenteeism among nurses.

Managers of the regional hospital, from which our study population was recruited, invite employees who have been absent due to sickness  $\geq 3$  times in a calendar year to discuss their absenteeism. Such briefings are likely to degenerate into discussions on whether the employee was legitimately absent from work due to illness or not. This can be prevented when managers gently explore how frequent absentees conceptualize work efforts and rewards to discover major motivators and barriers to well-being in work [49]. Adding motivators and removing barriers were possible is an example of well-considered management, which may have beneficial effects on an employee's health and well-being, reduce their sickness absence frequency, and promote job retention. If future research confirms a prospective relationship between effort – reward imbalance and sickness absence frequency, then line managers should learn the principles of the ERI-model and get further training to

enable them to provide pro-active support to frequent absentees. This knowledge can then be incorporated in nursing work design and management.

### What is already known about the topic?

- Although frequent short sickness absence episodes result in understaffing and the intention to leave a job, little is known about this type of absenteeism among nurses.
- Short-term sickness absence among nurses was found to be associated with job strain, low support at work, and kinship responsibility.

### What this paper adds

- Frequent absentees reported poor general -but not mental- health and high effort/reward ratios.
- Frequent absentees also had low over-commitment scores indicating that they had less difficulty to withdraw from work.
- These factors should be included in future prospective research on sickness absence frequency to develop sickness policies that effectively reduce absenteeism amongst nurses.

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# Coping styles relate to health and work environment of Norwegian and Dutch hospital nurses: a comparative study

Published in: Nursing Outlook 2012; 60(1): 37-43

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## ABSTRACT

**Background:** Nurses exposed to high nursing stress report no health complaints as long as they have high coping abilities.

**Purpose:** To investigate coping styles in relation to the health status and work environment of Norwegian and Dutch hospital nurses.

**Method:** Comparative study of a random sample of 5,400 Norwegian nurses and a convenience sample of 588 Dutch nurses. Coping, health and work environment were assessed by questionnaire and associations were investigated bivariately and multivariately.

**Discussion:** Active problem-solving coping associates with health and work environment among Norwegian nurses but not in Dutch nurses, possibly due to sampling differences. Passive coping (avoiding problems or waiting to see what happens) relates to poor general health, poor mental health, low job control and low job support in both Norwegian and Dutch nurses.

**Conclusions:** Improvements in the nursing work environment may not only result in better mental health, but also reduce passive coping.

## INTRODUCTION

Stress is a major concern in the nursing profession with work overload, role conflicts and experiences of aggression as common stressors [1-3]. Even when the level of stress is the same, there are large individual differences in stress responses depending on how individuals cope with stress [4]. Stress is a transactional phenomenon between the individual and the environment, and it is the perception or appraisal of the event rather than the event itself that determines the subsequent response or coping behaviour. Coping refers to the thoughts and actions people use to deal with stress. Some researchers define coping as habitual behavior that is stable across a wide variety of stressful situations [5,6]. The idea that coping is a personality trait [7] is supported by strong correlations between personality and coping [8,9] and by evidence that personality and coping have a shared genetic basis [10].

The concept of coping as a dispositional trait offers a picture of how individuals are inclined to cope with stress, but provides limited information about the coping skills people actually use in stressful encounters [7]. Therefore, some researchers propose a transactional approach in which coping skills change to meet the evolving demands of a stressful situation. Coping involves the efforts to alter a stressful situation (which is problem-solving coping) as well as efforts to regulate the emotional distress of the stressful encounter (which is emotion-focused coping) [4]. People typically employ problem-focused coping strategies, purposively targeted at solving the problem at hand, when they perceive control over stressful events [11,12]. Emotion-focused coping, aimed at minimizing negative emotions through seeking distraction and social support or by avoiding problems, predominates when people feel that the stressful event is something that must be endured.

Coping skills are affected by psychological disorders. For example, depressed people use less problem-solving coping and more emotion-focused coping compared with nondepressed [13]. A systematic review showed that problem-focused coping was associated with good health, while emotion-focused strategies were related to poor health Penley et al. [14]. In nursing students, emotion-focused coping was predominantly associated with mental symptoms [15,16]. In Asian and Australian hospital nurses, problem-focused coping was related to better mental health, whereas emotion-focused coping was associated with reduced mental health [17,18]. This finding suggests mental health benefits for nurses who use problem-solving to cope with stress by addressing the external source of the stress, rather than emotion-focused coping in which nurses try to control or manage their internal response to stress.

This study investigated coping styles in relation to the work environment of Norwegian and Dutch hospital nurses. The following research question was addressed: Are the coping styles of Norwegian and Dutch hospital nurses similarly associated with their health and work environment?

## METHODS

This paper presents the results of two separate studies, which were designed and performed independently of each other. Afterwards, the results turned out to be comparable, because similar questionnaires were used and both studies were performed at the same point in time. It is hardly ever possible to compare coping studies internationally. Furthermore, the literature is inconsistent and ambiguous when it comes to comparing coping styles. Therefore, the results of both studies are compared in this paper.

### Study samples

The data of Norwegian nurses were obtained from the Survey of Sleep, Shift work and Health (SUSSH), conducted in the period from December 2008 to March 2009 among 87,083 members of the Norwegian Nurses Organization (NNO). A random sample of 6,000 nurses was drawn from the member register of the NNO. Each nurse in the sample received a questionnaire by postal mail. The nurses returned the completed questionnaire in a pre-paid envelope to the Department of Public Health and Primary Health Care of the University of Bergen. Nurses who did not return their completed questionnaire received reminders twice, once in December 2008 and once in February 2009. An internet based version of the questionnaire was available for those who preferred to complete the questionnaire online. The Regional Committees for Medical and Health Research Ethics Western Norway approved the SUSSH study.

Dutch nurses (N=588) were enrolled from a hospital in the northern Netherlands and received a questionnaire in October – November 2008. The nurses returned their completed questionnaire in a pre-paid envelope to ArboNed Occupational Health Services. It was not possible to complete the questionnaire online. Ethical approval was not necessary, as the Dutch Act on Scientific Medical Research does not apply to cross-sectional questionnaire surveys.

### General and mental health

General health and mental health were assessed by the SF-12 Health Survey, which is a short version of the SF-36 that measures physical and mental health-related quality of life [19]. General health was measured with the single SF-12 item asking for an overall rating of health on a 5-point scale (0 = “poor”; 1 = “fair”; 2 = “good”; 3 = “very good”; 4 = “excellent”), which is one of the most widely used general measures of health status. The Mental Health Inventory (MHI) subscale of the SF-12 measured mental health by assessing mood and anxiety symptoms [19,20]. The Norwegian nurses answered the MHI-items on a 5-point scale (1 = “always”; 2 = “most of the time”; 3 = “some of the time”; 4 = “a little of the time”; 5 = “never”),

whereas the Dutch nurses answered on a 4-point scale (1 = “always”; 2 = “most of the time”; 3 = “some of the time”; 4 = “never”). The scores on general health and mental health were expressed as percentages of the maximum score, with higher scores indicating better mental health.

## Work environment

The Job Content Questionnaire assessed the nursing work environment by items on job demands, job control, and job support with a 4-point scale that ranged from 1 = “strongly disagree” to 4 = “strongly agree” (Table 1) [21]. Job demands were investigated with items about having to work hard or fast and dealing with conflicting job demands. Job control was assessed with items about skill discretion, autonomy and latitude in work. Job support was measured with items about collaborating with co-workers and supervisors. The scores on job demands, job control, and job support were expressed as percentages of the maximum score for the subscale with increasing scores indicating higher demands, control, and support, respectively.

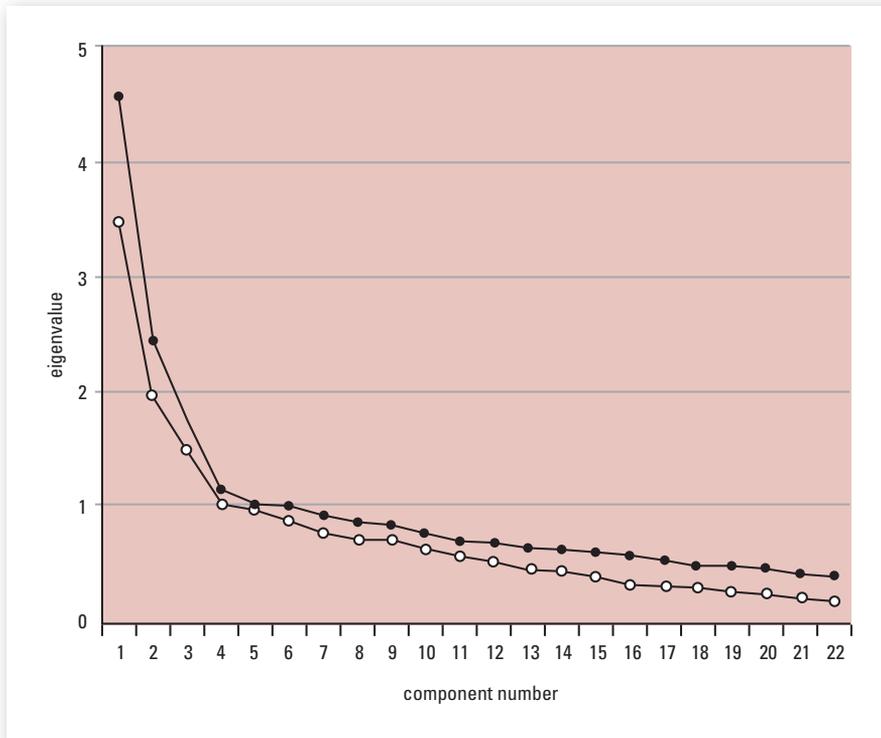
**TABLE 1. Summary of the instruments used in the study**

	Norwegian nurses Items ( $\alpha^1$ )	Scale	Dutch nurses Items ( $\alpha^1$ )	Scale
<b>Health</b>				
SF-12 overall rating of health	1	5-point	1	5-point
SF-12 mental health inventory	5 (0.73)	5-point	5 (0.72)	4-point
<b>Work environment</b>				
Job demands	5 (0.78)	4-point	5 (0.86)	4-point
Job control	6 (0.79)	4-point	6 (0.76)	4-point
Job support	6 (0.82)	4-point	6 (0.82)	4-point
<b>Coping styles</b>				
Passive coping	7 (0.79)	4-point	7 (0.79)	4-point
Active coping	5 (0.74)	4-point	5 (0.74)	4-point

<sup>1</sup> Cronbach's alpha of scale reliability

## Coping styles

The Utrecht Coping List assesses coping styles with questions about how persons cope with stressful encounters [22]. The items had a 4-point score scale with 1 = “seldom or never”; 2 = “sometimes”; 3 = “often”; 4 = “very often”. To address the differences between Norwegian nurses and Dutch nurses, we performed a principal component analysis in both samples instead of relying on the predetermined UCL-subcales. Scree plots for the Norwegian sample and the Dutch sample revealed four components with eigenvalues >1 (Figure 1) [23].



**FIGURE 1. Scree plot component analysis of UCL-items in both study samples**

Scree plot showing the eigenvalues of the components based on the responses on the Utrecht Coping List (UCL) of Norwegian nurses (black bullets) and Dutch nurses (white bullets).

Component 1 consisted of items, such as “I try to avoid difficult situations”, “I reconcile myself to the situation”, “I try to get away from the situation” and “I wait to see what will happen next”. These items reflected a passive coping style, which is a type of emotion-focused coping. The passive coping scale had a Cronbach’s  $\alpha=0.79$  in the sample of Norwegian nurses and  $\alpha=0.77$  in the sample of Dutch nurses (Table 1).

Component 2 represented a scale of active problem-solving strategies with items, such as “I study the problem thoroughly”, “I intervene directly with the problem”, “I look upon the problem as a challenge” and “I consider different solutions to the problem”. The active coping scale had a Cronbach’s  $\alpha=0.74$  in both samples (Table 1).

The items loading on components 3 and 4 differed between the Norwegian sample and the Dutch sample. Therefore, we only used the passive and active coping scales in the further analyses. The scores on these two coping scales were expressed

as percentages of the maximum score for each style with increasing scores indicating that the style was more frequently used in stressful encounters.

### Statistical analysis

Coping styles are unequally distributed in men and women [24]. Therefore, responses from men and women must be analysed separately. As the Dutch sample of nurses included few men (N=22), health and work environment were investigated in relation to the coping styles of female Norwegian and Dutch nurses.

Data were analysed in SPSS for Windows version 16. The characteristics of female nurses working in hospitals in Norway were compared to those of female nurses working in the hospital in the Netherlands using Student t-tests for independent samples and Chi-square analyses of proportions. Bivariate Pearson correlations of coping styles with health and work environment were calculated separately for Norwegian nurses and Dutch nurses.

Median split dichotomized the scores on passive and active coping styles in the Norwegian sample and the Dutch sample. The dichotomized coping scores were the outcome variable in multiple logistic regression analysis in which the scores on general health, mental health, job demands, job control, and job support were included as continuous independent variables. Age was controlled for in the logistic regression analysis and significance was concluded for  $p < 0.05$ .

## RESULTS

As the addresses of 600 NNO members were not correct, the Norwegian sample consisted of 5,400 nurses of whom 2,059 (38%) returned their questionnaire and 1,428 were female hospital nurses. Of the Dutch sample of 588 nurses, 408 (69%) returned their questionnaire of whom 386 were women. Norwegian nurses were 32.6 (standard deviation [SD]=8.0) years of age and significantly younger than Dutch nurses, who had a mean age of 39.9 (SD=9.8) years (Table 2). The difference in age was most likely due to differences in sampling. Norwegian nurses were eligible if they graduated after 1995 and worked at least 50% of a full-time position. This may also explain the shorter duration of employment of Norwegian nurses compared with Dutch nurses and the fact that Norwegian nurses worked more hours per week.

Dutch nurses perceived better general health and better mental health than Norwegian nurses (Table 2). Norwegian and Dutch nurses reported equal job demands, whereas Norwegian nurses experienced higher job control and support than Dutch nurses. With regard to coping styles, Dutch nurses had higher scores on both active and passive coping than Norwegian nurses.

TABLE 2. Characteristics of Norwegian and Dutch hospital nurses

	Random sample Norwegian nurses (n = 1,428)	Convenience sample Dutch nurses (n = 386)	Analysis of difference (p-value)
<b>Age</b>	32.6 (8.0)	39.9 (10.0)	.000 <sup>a</sup>
<b>Duration of employment in years</b>	5.3 (4.3)	11.9 (8.6)	.000 <sup>a</sup>
<b>Work hours per week</b>			.000 <sup>b</sup>
<b>N (column%)</b>			
<20	37 (3%)	111 (29%)	
20-30	448 (31%)	184 (48%)	
>30	943 (66%)	91 (23%)	
<b>General health (SDc)</b>	77.2 (18.9)	80.9 (14.8)	.000 <sup>a</sup>
<b>Mental health (SDc)</b>	70.7 (18.4)	86.9 (11.3)	.000 <sup>a</sup>
<b>Job demands (SDc)</b>	73.2 (12.9)	69.7 (16.5)	.395 <sup>a</sup>
<b>Job control (SDc)</b>	79.0 (9.1)	73.6 (12.6)	.000 <sup>a</sup>
<b>Job support (SDc)</b>	86.2 (12.3)	75.1 (14.8)	.000 <sup>a</sup>
<b>Active coping (SDc)</b>	60.2 (10.0)	73.9 (11.3)	.000 <sup>a</sup>
<b>Passive coping (SDc)</b>	42.0 (9.4)	57.8 (11.8)	.002 <sup>a</sup>

<sup>a</sup> Student t-test<sup>b</sup> Chi-square test<sup>c</sup> Standard deviation

Bivariate analyses showed positive correlations of active coping with general health, mental health, job control and job support (Table 3). High scores on passive coping correlated with poor general health, poor mental health, high job demands, low job control, and low job support. The correlations of coping styles with health and work environment were stronger in the large sample of Norwegian nurses than in the small sample of Dutch nurses, but similar in that correlations were in the same direction.

In all, 97 Norwegian nurses (7%) and 6 Dutch nurses (2%) had incomplete data. A total of 1,331 female Norwegian nurses and 380 female Dutch nurses with complete data were eligible for logistic regression analysis. Multivariate analysis showed that Norwegian nurses with active coping had higher odds (odds ratio [OR]=1.72) of good general health. Passive coping associated with lower odds of good general health in both Norwegian (OR=0.91) and Dutch nurses (OR=0.92) and also with lower odds of good mental health (OR=0.72 and OR=0.90, respectively).

**TABLE 3. Bivariate correlations of coping styles with health and work environment**

The table shows Pearson correlation coefficients with \*  $p < 0.05$  and \*\*  $p < 0.01$  (2-tailed). In all, 97 Norwegian nurses (7%) and 6 Dutch nurses (2%) had incomplete data. A total of 1,331 female Norwegian nurses and 380 female Dutch nurses with complete data were eligible for logistic regression analysis. Multivariate analysis showed that Norwegian nurses with active coping had higher odds (odds ratio [OR]=1.72) of good general health. Passive coping associated with lower odds of good general health in both Norwegian (OR=0.91) and Dutch nurses (OR=0.92) and also with lower odds of good mental health (OR=0.72 and OR=0.90, respectively).

	Norwegian nurses (N=1,428)		Dutch nurses (N=386)	
	Active	Passive	Active	Passive
<b>N</b>	1,423	1,423	380	380
<b>missing</b>	5	5	6	6
<b>General health</b>	0.15**	-0.22**	0.16*	-0.01
<b>Mental health</b>	0.14**	-0.45**	0.11*	-0.13**
<b>Job demands</b>	-0.03	0.11**	-0.10	0.11*
<b>Job control</b>	0.20**	-0.15**	0.26**	-0.16**
<b>Job support</b>	0.14**	-0.16**	0.29**	-0.23**

With regard to the nursing work environment (Table 4), job control associated with higher odds of active coping in Norwegian nurses (OR=1.31) and with lower odds of passive coping in both Norwegian (OR=0.83) and Dutch nurses (OR=0.72). Job support related to higher odds of active coping in Dutch nurses (OR=1.31) and with lower odds of passive coping in both Norwegian (OR=0.90) and Dutch nurses (OR=0.78). Hence, nurses with a passive coping style experienced low control over work and low social support at the workplace.

**TABLE 4. Multivariate associations of coping styles with health and work environment controlling for age**

The table shows odds ratios (95% confidence intervals) per 10 years increase in age and per 10% increase in the scores on health and work environment (on a scale from 0% to 100%) with \*  $p < 0.05$  and \*\*  $p < 0.01$ .

	Norwegian nurses (N=1,331)		Dutch nurses (N=380)	
	Active	Passive	Active	Passive
<b>General health</b>	1.72 (1.56-1.88)**	0.91 (0.84-0.99)*	1.05 (0.95-1.16)	0.92 (0.85-1.00)*
<b>Mental health</b>	1.03 (0.95-1.11)	0.72 (0.66-0.78)**	1.13 (0.94-1.39)	0.90 (0.84-0.98)*
<b>Job demands</b>	1.02 (0.92-1.13)	1.08 (0.98-1.19)	1.00 (0.87-1.15)	1.08 (0.73-1.27)
<b>Job control</b>	1.31 (1.14-1.35)**	0.83 (0.73-0.96)**	1.14 (0.95-1.36)	0.72 (0.56-0.90)**
<b>Job support</b>	1.04 (0.94-1.15)	0.90 (0.82-1.00)*	1.31 (1.12-1.53)**	0.78 (0.65-0.93)**

## DISCUSSION

This study describes the associations between coping styles, health, and work environment in a large random sample of Norwegian hospital nurses educated after 1995 and a smaller convenience sample of Dutch nurses who had worked in a hospital for an average of 12 years. Differences in the results between Norwegian and Dutch nurses may well be due to the different sampling. Therefore we focus the discussion on the similarities of associations.

Passive coping, which is an emotion-focused coping strategy, associates with poor general health and poor mental health in both Norwegian and Dutch nurses. This finding confirms previous results showing that emotion-focused coping strategies such as distancing and avoidance were each correlated with poor general health [14]. Distancing, resignation, and avoidance also related to negative psychological health outcomes, which is in agreement with the strong associations between passive coping styles and poor mental health in the present study. The association of passive coping with poor mental health also confirms previous studies on nursing stress and emotion-focused coping in hospital nurses [17,18].

### Nursing work environment and work styles

With regard to the nursing environment, low job control and low job support were related to passive coping styles among nurses in both countries. Jobs that are low in demands and control are called passive jobs in Karasek's Demand – Control model [25]. Passive jobs lack work challenges and can lead to negative learning or gradual loss of previously acquired skills. Low control prevents workers from testing their own ideas for improving the work process and results in a demotivating job setting with loss of work performance [25]. Alternatively, active jobs with high control have a positive effect on learning and self-efficacy [25,26]. Although active jobs have high demands, they do not cause negative psychological strain, because job stressors are regarded as challenges and translated into direct action. Due to the high levels of control, the workers have the freedom to use all available capabilities. When workers have the freedom to decide the course of action in response to job stressors, they can test the efficiency of the chosen actions. Karasek's active learning hypothesis states that new behaviour patterns are learnt by reinforcing actions that have worked and modifying actions that have failed [25-27]. The present results showed that job control associated bivariately to active coping in both populations and multivariately in the larger Norwegian population. These results support that improved control over nursing care may stimulate active coping and counteract passive coping behaviour. However, the cross-sectional design of our study precludes conclusions about causal relationships between the nursing work environment and coping, because it is also possible that passive coping styles result in the perception of low job control and low job support. Moreover, the cross-sec-

tional design implied that associations between mental health, passive coping and work environment may reflect a common-method bias [28], for example if nurses with habitual passive coping are gloomy about their health and work environment.

### Implications for practice

Current evidence indicates that social and environmental attributes of hospital nursing practice have an effect on the outcomes of care [29,30]. Furthermore, the nursing work environment is important for recruiting and retaining nurses in hospitals. During the US national nursing shortage in the 1980s, a group of hospitals were designated as “magnet hospitals” because of their ability to successfully attract and retain professional nurses when most hospitals throughout the US were having difficulty achieving that goal [31]. Themes identified by nurses for purposes of retention included a desire for autonomy, empowerment, and decision-making opportunities in their work [31-33]. Control over nursing practice and autonomy in decision making together with collaborative relationships and the perception that staffing is adequate were essential for a satisfying and productive work environment from the perspective of staff nurses [34]. Nurse managers play a key role in creating a positive nursing work environment. It has been shown that collaboration and participation are empowering working conditions that are fundamental for creating healthy nursing work environments [35]. Collaboration refers to job support and participation in decision-making reflects job control. The results of the present study show that low support (i.e. poor collaboration) and low control (i.e. poor participation) at work relate to a passive coping style. This may adversely affect the quality of nursing and patient outcomes. Further prospective research is needed to provide a better understanding of the mechanisms that link the nursing work environment to nursing care and patient outcomes. Nevertheless, the findings of the present study emphasize the importance of good collaboration and participation in nursing teams, which may help nurse managers and others to consider strategies for the improvement of the nursing work environment to foster more positive outcomes for both nurses and patients.

### Strengths and limitations of the study

Norwegian nurses and Dutch nurses completed similar questionnaires at the same point in time. Although the response rate of Norwegian nurses was low and vulnerable to selection bias, it was reassuring to find similar bivariate correlations between coping styles, health, and work environment in Dutch nurses who had a response rate of 69%. The strength of our results is established by the similarities in associations observed in both samples. Differences in associations may be due to sampling differences, the Norwegian population being a random stratified sample and the Dutch population a sample of convenience, both selected for their

availability. The low response rate among Norwegian nurses and the convenience sample of Dutch nurses restrict the generalisability of the results for nurses in the broader setting of healthcare.

Another limitation is that the studies were designed and performed separately. Afterwards, the results of both studies appeared to be comparable, except for the response alternatives on the Mental Health Inventory. Norwegian nurses scored mental health items on a 5-point scale, whereas the Dutch nurses used a 4-point scale. We dealt with this difference by using the percentage of the maximum score instead of the cumulative score for the scales.

Furthermore, the coping scores differed between the countries. Dutch nurses had higher scores on both active and passive coping than Norwegian nurses. We dealt with these cross-cultural differences by analyzing the results of Norwegian nurses and Dutch nurses separately. The respondents consistently scored higher on active coping than on passive coping indicating that problem-solving coping strategies were preferred. Possibly, problem-solving coping styles are more valued and appreciated than emotion-focused styles. An alternative explanation for the higher scores on active coping may be that the nature of nurses' work requires them to be problem solvers or that nurses are trained to take action rather than using passive strategies when problems arise. We dealt with the differences in scores by transforming coping into dichotomous variables by median split instead of using the mid-scale score of 50% of the maximum score.

## CONCLUSION

A passive coping style, which is a type of emotion-focused coping, associates with poor (mental) health in both Norwegian and Dutch hospital nurses. Despite differences in sampling and countries, passive coping consistently associates with both low job control and low job support. On the one hand, low control and low support may evoke passive coping. On the other hand, nurses with habitual passive coping may experience little control over work and low support within the nursing team. Either way, it is important for nurse managers to recognize passive coping, because this type of coping associates with poor health.

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# Self-rated coping styles and registered sickness absence among nurses working in hospital care: a prospective 1-year cohort study

Published in:  
International Journal of Nursing Studies 2011; 48(7): 838-846

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## ABSTRACT

**Background:** Sickness absence is an important problem in healthcare that affects the quality of care. Sickness absence has been related to coping strategies. Problem-focused coping was shown to be associated with low sickness absence and emotion-focused coping with high sickness absence among postal workers.

**Objectives:** This study investigated the relationship between coping styles and sickness absence in healthcare.

**Design:** Prospective study linking self-rated coping styles at baseline, with the number of episodes of sickness absence during one year of follow-up.

**Setting:** Somatic hospital employing 1,153 persons.

**Participants:** Convenience sample of 566 female nurses working in the hospital's clinical wards and outpatient clinic. Of these, 386 (68%) nurses had complete data for analysis.

**Methods:** The nurses completed a questionnaire at baseline with items on health, work, and coping styles. Three styles of coping were defined: problem-solving coping (i.e., looking for opportunities to solve a problem), social coping (i.e., seeking social support in solving a problem), and palliative avoidant coping (i.e., seeking distraction and avoiding problems). Sickness absence data were retrieved from the hospital's register in the following year. The association between the coping styles and the number of both short (1-7 days) and long (>7 days) episodes of sickness absence was assessed by Poisson regression analyses with age, work hours per week, general health, mental health, and effort – reward [ER] ratio as covariates.

**Results:** Problem-solving coping was negatively associated with the number of long episodes of sickness absence (rate ratio [RR]=0.78, 95% confidence interval [CI]=0.64–0.95). Social coping was negatively associated with the number of both short episodes (RR=0.88, 95% CI=0.79–0.97) and long episodes (RR=0.79, 95% CI=0.64–0.97) of sickness absence. After adjustment for the ER-ratio, the associations of coping with short episodes of sickness absence strengthened and associations with long episodes weakened, however significance was lost for both types of sickness absence. Palliative avoidant coping was not associated with sickness absence among female hospital nurses.

**Conclusion:** Problem-solving coping and social coping styles were associated with less sickness absence among female nurses working in hospital care. Nurse managers may use this knowledge and reduce sickness absence and understaffing by stimulating problem-solving strategies and social support within nursing teams

## INTRODUCTION

Absenteeism is a major problem in the healthcare sector of many countries, leading to nursing staff shortages that result in an increase in the nursing workload and interfere with the efficiency and quality of nursing care [1,2]. The reasons for absenteeism among nurses are still poorly understood. Davey et al. [3] recently reviewed the factors associated with absenteeism among nurses and reported that prior individual absence was the best predictor of absenteeism. The systematic review reported inconclusive results for individual factors, work attitudes and organization as predictors of absenteeism among nurses. It has been reported that taking time off and the quitting of jobs increased with higher nursing stress [4]. Nurses are subject to general work stressors such as heavy workload, shift work, role conflicts, role ambiguity and environmental hazards. The fact that stress is higher in healthcare than in other sectors may be due to the emotional demands and responsibility of patient care. Nursing stress is associated with sickness absence, but it is difficult to explain the quantitative relationships between stress and stress responses. Even when the level of stress is the same, there are large individual differences in stress responses [5,6].

Individual stress coping resources act as an intermediary factor between stressors and stress responses. Ida et al. [7] investigated nursing stress and stress coping abilities in relation to sickness absence as a response to stress. They assessed coping abilities with a 29-item sense of coherence (SOC) scale that measures the extent to which one has the confidence and resources to meet environmental demands [6,8]. A high SOC allows one to cope with stressors more appropriately [9-11]. The authors found that high SOC stress coping ability was associated with fewer days of sickness absence among female nurses working in a Japanese university hospital [7]. However, SOC represents an ability to choose appropriate approaches to stressful events rather than a personal coping style.

### Coping with stressful situations

Coping refers to the thoughts and actions people use to deal with stress [12]. Some researchers have defined coping as habitual thoughts and actions that are stable across a wide variety of stressful situations [13-15]. These ideas were supported by strong correlations between personality and coping [16,17]. However, the dispositional concept does not predict the strategies people actually use in stressful encounters [12]. For this reason, some researchers consider coping to be a transactional phenomenon with changing skills to meet the evolving demands of a stressful situation [18,19].

Coping skills are divided into problem-focused strategies, purposively targeted at solving the problem at hand, and emotion-focused strategies that minimize negative emotions by emotional expression, seeking distraction, and avoiding

problems [19]. People use both types of strategies to cope with stressful events. The predominance of one strategy over another is determined by personal style and the appraisal of the stressful event [20]. People typically employ problem-focused coping when they perceive control over stressful events. Emotion-focused coping predominates when people feel that the stressful event is something that must be endured [18]. Emotion-focused coping has been related to poor general health, [21] and depressive symptoms [22]. Therefore, it is likely that emotion-focused coping will also be associated with sickness absence.

### Coping and sickness absence

Sickness absence, defined as not coming to work due to illness, is divided into two types. Long-term sickness absence, lasting longer than 7 days, is likely to be related to diseases with physical or mental impairments resulting in work disability [23]. Short-term sickness absence, lasting several days, was found to be related to personal well-being and individual factors [23,24]. Short-term sickness absence has been regarded as a type of voluntary absenteeism in the sense that individuals decide whether or not to call in sick. The decision to report sick is assumed to be associated with the appraisal of illness [25, 26], especially when symptoms are poorly defined [27]. Voluntary sickness absence without clear medical impairments usually manifests itself in frequent short absences [23,28,29]. Such short sickness absences can be regarded as a type of avoidant coping when employees report sick to withdraw from work-related stress and strains [30]. Alternatively, frequent short sickness absence may reflect a problem-solving coping behaviour when employees take short times off work to recover in order to prevent long-term sickness absence [29,31].

Despite the idea that coping strategies are related to sickness absence, few studies have reported on the relationship between specific coping styles and sickness absence. Van Rhenen et al. [32] investigated coping styles and sickness absence in a population of 3,628 postal workers of whom 3,302 (91%) were men. Postal workers with high scores on problem-solving coping were found to have fewer episodes of sickness absence during one year of follow-up than workers with low scores on problem-solving coping. In contrast, high scores on problem-solving coping were found to be associated with a higher frequency of short episodes of sickness absence in a cross-sectional survey of 350 women working in hospital care [33]. The different findings may be explained by gender differences between the populations. Men and women are commonly thought to have different styles of coping [34]. Men are more likely to confront a problem head-on, whereas women exhibit more emotional responses to problems and spend more time discussing problems with friends or family.

The relationship between specific coping styles and sickness absence in healthcare is still unclear. Therefore, we designed a study to investigate whether specific coping styles were prospectively associated with sickness absence among female nurses working in hospital care. In addressing the prospective association between coping styles and sickness absence, we assumed that coping has a dispositional basis meaning that individuals prefer habitual coping styles in stressful situations. Coping has been associated with short-term sickness absence lasting several days to a maximum of one week [23,29,31]. Hence, we distinguished between short (1-7 days) and long (>7 days) episodes of sickness absence and hypothesized that specific coping styles are related to the number of short episodes.

## SUBJECTS AND METHODS

### Study population and design

This prospective study linked coping styles assessed at baseline in October and November 2008 with the number of episodes of sickness absence during a follow-up period from January 2009 to December 2009. The study population was enlisted from a somatic hospital staffing a total of 1,135 employees and was described earlier [35]. Of these employees, a convenience sample of 588 nurses working in the clinical wards or outpatient clinic of the hospital was selected for this study to ensure a homogeneous sample with regard to the type of work and working environment. Male nurses (n=22) were left out of analysis to exclude gender bias. A total of 566 female nurses received a questionnaire from the human resources department of the hospital and were asked to return the completed questionnaire to ArboNed Occupational Health Services.

### Ethical considerations

Ethical approval was not required, because the Act on Scientific Medical Research does not apply to single questionnaire surveys in the Netherlands [36]. A letter added to the questionnaire informed the employees about the purpose and conduct of the study. By returning the completed questionnaire, participants gave consent for the use of both the questionnaire results and their sickness absence data for scientific analysis. The sickness absence data of non-participants were grouped and anonymised. Dutch privacy legislation on the use of medical data for scientific research states that informed consent is not needed for the analysis of anonymised data [37].

## Baseline questionnaire

The baseline questionnaire assessed coping styles with the use of the shortened 19-item version of the Utrecht Coping List (UCL), which asks individuals how they handle stressful situations [38]. The questions were scored on a 4-point scale: 1 = seldom or never, 2 = sometimes, 3 = often, 4 = very often. The 19-item version of the UCL has a five-factor structure including problem-solving coping (5 items about thinking of different possibilities to solve a problem; established Cronbach's  $\alpha=0.81$ ), social coping (5 items about seeking advice, comfort and sympathy; established  $\alpha=0.76$ ), palliative coping (4 items about seeking distraction from the problem; established  $\alpha=0.68$ ), avoidant coping (3 items about avoiding problematic situations; established  $\alpha=0.67$ ), and emotional coping (2 items about showing anger and frustrations; established  $\alpha=0.65$ ).

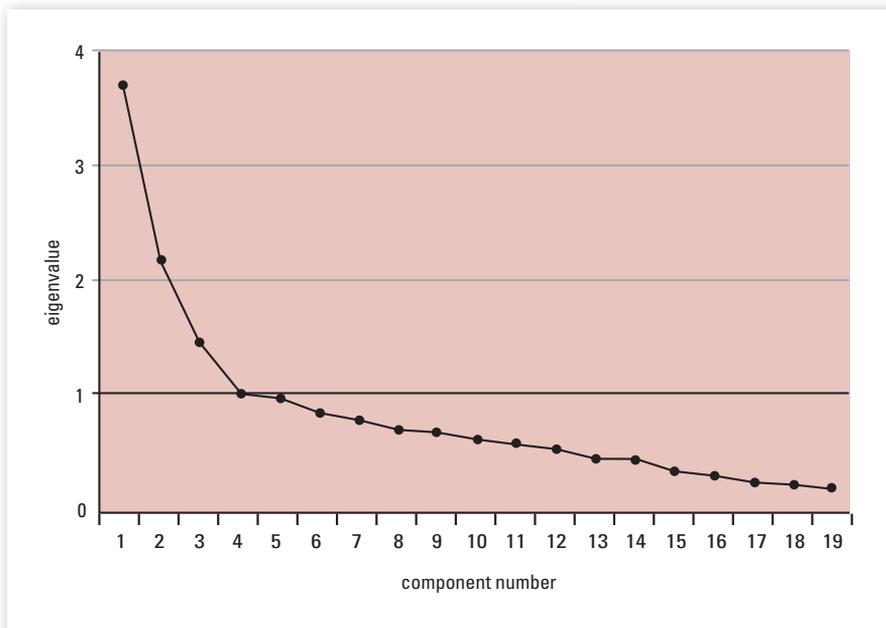
**TABLE 1. Component analysis of the 19-item Utrecht Coping List (UCL)**

The table shows the results of varimax rotation component analysis; the bold items were grouped into scales.

Item	Component			
	1	2	3	4
Showing annoyance	-0.281	-0.077	0.111	0.318
Avoiding problems	-0.105	-0.355	<b>0.691</b>	0.294
Sharing concerns with others	<b>0.691</b>	0.215	-0.051	-0.007
Resigning to problems	0.195	-0.055	<b>0.770</b>	-0.001
Intervening on problems	0.142	<b>0.693</b>	0.094	-0.176
Seeking distraction	0.081	0.149	<b>0.811</b>	0.091
Flying into a rage	-0.314	-0.123	0.096	0.399
Considering different viewpoints	0.022	<b>0.741</b>	0.011	-0.043
Asking someone for help	<b>0.623</b>	0.272	0.011	0.162
List all the points of a problem	0.231	<b>0.693</b>	-0.031	0.032
Showing emotions	<b>0.722</b>	0.128	0.154	-0.092
Thinking of different solutions	0.119	<b>0.764</b>	0.162	-0.029
Thinking of other things	0.154	0.011	<b>0.799</b>	0.022
Dispelling concerns by going out	0.138	0.017	<b>0.671</b>	0.048
Seeking comfort	<b>0.753</b>	-0.047	0.146	-0.080
Acting goal-directed	0.148	<b>0.737</b>	-0.062	0.002
Conceding to avoid problems	-0.077	-0.200	<b>0.666</b>	0.186
Telling others about problems	<b>0.741</b>	0.036	0.032	-0.132
Somehow seeking something pleasant	0.221	0.104	0.748	-0.018

To our knowledge, the 19-item version of the UCL has not been used before for research in hospital care. Therefore, we performed a principal component analysis on the responses obtained in this study. Varimax rotation factor analysis extracted 3

principal components with eigenvalues  $>1$  [39] as is shown in Table 1 and Figure 1. Component 1 consisted of 5 items (Cronbach's  $\alpha=0.77$  in this study) corresponding to the UCL-19 scale of social coping. Component 2 contained the 5 items ( $\alpha=0.78$  in this study) of the UCL-19 scale of problem-solving coping. Component 3 included 7 items ( $\alpha=0.72$  in this study) that encompassed palliative coping and avoidant coping of the UCL-19. Therefore, we defined this component as palliative avoidant coping. The scores of the three coping scales were expressed as percentages of the maximum score with higher scores indicating that the style was more frequently used. Component 4 containing the UCL-19 items about showing emotions and frustrations scored an eigenvalue of 1.0 [39], but was not included in the analyses because of the low Cronbach's  $\alpha=0.44$  found in this study.



**FIGURE 1. Scree plot component analysis of the 19-item UCL**

Recently, it was reported that young women working many hours per week in hospital care, especially those perceiving effort – reward imbalance and poor health, had more frequent episodes of sickness absence than older women who worked a few hours per week perceiving effort – reward balance and good health [33,35]. These factors may confound the associations between coping and sickness absence and were therefore measured at baseline. Age and the number of working hours per week were obtained from the hospital's human resources department. Health status, work efforts and work rewards were included in the baseline questionnaire. The health status was measured using the 12-item short form (SF-12) of the RAND-36 that measures health-related quality of life [40,41]. The SF-12 scores were expressed

as percentages of the maximum score with higher scores reflecting better health. Work efforts and work rewards were measured with the Effort Reward Imbalance Questionnaire [42]. The subscale extrinsic efforts consisted of 5 items (Cronbach's  $\alpha=0.70$  in this study) referring to workload, time pressure, overtime work, work responsibilities and frequent work interruptions. The subscale rewards ( $\alpha=0.73$  in this study) contained 4 items on esteem reward (respect from supervisors and colleagues, educational opportunities, and job security) and 1 item on monetary gratification. All items were measured on a 4-point scale (1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree) and the scores were recoded so that high scores reflected high efforts and high rewards. The effort – reward ratio (ER-ratio) was calculated by dividing the score on work efforts by the score on work rewards [35]. An ER-ratio  $>1$  reflects work stress in terms of high efforts and/or low rewards [43-45].

### Sickness absence data

Sickness absence data were obtained from the hospital's register. In the hospital, nurses report sick to their manager and the manager sends the sick report to the human resources department. The human resources department records sickness absence irrespective of its duration. Thus, even one day of absence from work due to illness is recorded in the sickness absence register. Employees usually visit the occupational physician (OP) in the third week of sickness absence for a medical certification of sickness and socio-medical guidance supporting return to work. When nurses resume work, the manager sends a recovery report to the human resources department. The quality of the sickness absence register is assessed by the Netherlands Institute for Accreditation in Health Care.

### Data analysis

The number of episodes of sickness absence recorded between 1 January 2009 and 31 December 2009 was counted for each nurse, distinguishing between short episodes (lasting 1 to 7 days) and long episodes (lasting  $>7$  consecutive days). The rationale for this distinction is based on the sickness absence literature that regards episodes lasting up to 7 days as short-term sickness absence. The number of episodes of sickness absence is a type of count data for which a Poisson regression model was calculated using generalized linear models in SPSS version 16 [46,47]. Episodes of sickness absence were the dependent variable and the coping scores were inserted as continuous independent variables in Poisson regression analysis. The Poisson distribution implies that the variance is equal to the mean. The dispersion parameter  $\phi$  reflects under-dispersion (i.e.  $\phi < 1.0$ ) when the variance is less than the mean and over-dispersion ( $\phi > 1.0$ ) when the variance is higher than the mean [48]. The Poisson models provided an adequate fit for both the number of short episodes ( $\phi = 1.14$ ) and long episodes ( $\phi = 0.88$ ) of sickness absence during

follow-up. The results of the Poisson regressions are presented in rate ratios (RR) with 95% confidence intervals (95% CI).

Age, working hours, health status and ER-ratio were controlled for in the Poisson regressions using a forward stepwise approach. In the first step, age was added to the Poisson regression model as a continuous covariate (Model 1). Subsequently, we added the number of working hours (Model 2), health status (Model 3), and ER-ratio (Model 4) as continuous covariates. Effort – reward imbalance, which is an ER-ratio  $>1.0$ , was found to reflect work stress in Canadian [49], Danish [50] and Chinese [51] nurses. Stressful work and coping might interact and therefore we tested for interaction by computing the variable ER\*coping, which was  $b=0.12$  (95% CI  $-0.25$  to  $0.49$ ;  $p=0.58$ ) for problem-solving coping,  $b=0.12$  (95% CI  $-0.15$  to  $0.39$ ;  $p=0.22$ ) for social coping, and  $b=0.21$  (95% CI  $-0.08$  to  $0.50$ ;  $p=0.35$ ) for palliative avoidant coping. After removing the variance associated with the main effects of ER-ratio and coping [52], the interaction became borderline significant for social coping with  $b=0.19$  (95% CI  $0.01$  to  $0.37$ ;  $p=0.05$ ), but remained non-significant for the other coping styles:  $b=0.18$  (95% CI  $-0.04$  to  $0.40$ ;  $p=0.09$ ) and for problem-solving coping and  $b=0.10$  (95% CI  $-0.20$  to  $0.40$ ;  $p=0.53$ ) for palliative avoidant coping.

## RESULTS

Of the 566 questionnaires, distributed at baseline, 386 (68%) were returned. The nurses who returned the questionnaire (participants) had more sickness absence during follow-up than those who did not complete their questionnaire (non-participants) as is shown in Table 2.

The participating nurses scored higher on problem-solving coping (mean 74.8, standard deviation [SD]=13.4) than on both social coping (mean 65.1, SD=13.0) and palliative avoidant coping (mean 48.6, SD=10.0).

The associations of coping styles with short episodes of sickness absence are presented in Table 3 and associations with long episodes of sickness absence in Table 4. Problem-solving coping was associated with the number of long episodes of sickness absence (RR=0.78), but not with the number of short episodes of sickness absence (RR=0.95). Social coping was associated with the number of both short (RR=0.88) and long (RR=0.79) episodes of sickness absence. Palliative avoidant coping was not associated with the number of episodes of sickness absence.

**TABLE 2. Characteristics of the study population**

The table shows means (standard deviations) of the female nursing population (n=566) assessed at baseline and the sickness absence data of 1-year follow-up.

	Participants (N=386)	Non-participants (N=180)	Analysis
<b>Age in years</b>	39.9 (9.8)	38.3 (11.1)	P=0.08 <sup>a</sup>
<b>Hours/week</b>	18.6 (6.3)	15.8 (7.3)	P<0.01 <sup>a</sup>
<b>General health % of maximum score</b>	80.9 (14.8)	-	
<b>Mental health % of maximum score</b>	86.9 (11.3)	-	
<b>Effort – reward ratio</b>	1.04 (0.33)	-	
<b>Short<sup>c</sup> episodes of sickness absence</b>	1.0 (1.3)	0.6 (1.0)	
<b>Distribution in N (%)</b>			P<0.01 <sup>b</sup>
<b>0 short episodes</b>	150 (39)	101 (56)	
<b>1 short episode</b>	123 (32)	35 (19)	
<b>2 short episodes</b>	53 (14)	23 (13)	
<b>3 short episodes</b>	26 (7)	8 (4)	
<b>&gt;3 short episodes</b>	29 (8)	13 (8)	
<b>Long<sup>d</sup> episodes of sickness absence</b>	0.2 (0.5)	0.2 (0.5)	
<b>Distribution in N (%)</b>			P=0.61 <sup>b</sup>
<b>0 long episodes</b>	308 (80)	139 (77)	
<b>1 long episode</b>	58 (15)	31 (17)	
<b>2 long episodes</b>	20 (5)	10 (6)	

<sup>a</sup> t-test for independent samples

<sup>b</sup> Chi-square test

<sup>c</sup> lasting 1 to 7 days

<sup>d</sup> lasting more than 7 days

**TABLE 3. Coping styles at baseline and short (1-7 days) episodes of sickness absence during follow-up of 386 female participant nurses**

The table shows rate ratios (95% confidence intervals) of stepwise Poisson regression; \*  $p < 0.05$  and \*\*  $p < 0.01$ .

	Univariate	Model 1 <sup>a</sup>	Model 2 <sup>b</sup>	Model 3 <sup>c</sup>	Model 4 <sup>d</sup>
<b>Problem-solving coping</b>	0.95 (0.86 – 1.05)	0.96 (0.87 – 1.07)	0.99 (0.89 – 1.11)	0.99 (0.88 – 1.11)	0.87 (0.56 – 1.29)
<b>Social coping</b>	0.88 (0.79 – 0.97)*	0.88 (0.79 – 0.97)*	0.91 (0.84 – 1.00)*	0.92 (0.82 – 1.01)	0.50 (0.24 – 1.06)
<b>Palliative avoidant coping</b>	0.99 (0.89 – 1.09)	1.00 (0.90 – 1.11)	0.99 (0.89 – 1.11)	1.00 (0.89 – 1.12)	0.81 (0.58 – 1.13)

<sup>a</sup> adjusted for age

<sup>b</sup> adjusted for age + working hours

<sup>c</sup> adjusted for age + working hours + health status

<sup>d</sup> adjusted for age + working hours + health status + ER-ratio

**TABLE 4. Coping styles at baseline and long (>7 days) episodes of sickness absence during follow-up of 386 female participant nurses**

The table shows rate ratios (95% confidence intervals) of stepwise Poisson regression; \*  $p < 0.05$  and \*\*  $p < 0.01$ .

	Univariate	Model 1 <sup>a</sup>	Model 2 <sup>b</sup>	Model 3 <sup>c</sup>	Model 4 <sup>d</sup>
<b>Problem-solving coping</b>	0.78 (0.64 – 0.95)*	0.79 (0.65 – 0.97)*	0.78 (0.62 – 0.97)*	0.78 (0.62 – 0.98)*	0.93 (0.42 – 2.11)
<b>Social coping</b>	0.79 (0.64 – 0.97)*	0.79 (0.64 – 0.97)*	0.81 (0.65 – 1.00)*	0.82 (0.66 – 1.02)	0.97 (0.70 – 1.33)
<b>Palliative avoidant coping</b>	0.91 (0.74 – 1.12)	0.93 (0.76 – 1.14)	0.94 (0.76 – 1.18)	0.94 (0.75 – 1.17)	0.95 (0.47 – 1.93)

<sup>a</sup> adjusted for age

<sup>b</sup> adjusted for age + working hours

<sup>c</sup> adjusted for age + working hours + health status

<sup>d</sup> adjusted for age + working hours + health status + ER-ratio

Adjustment for age (Model 1) did not affect the associations between coping styles and sickness absence, whereas controlling for working hours weakened the associations (Model 2). After adding the health status to the Poisson regression models, the associations between social coping and sickness absence lost statistical significance (Model 3). After adding the ER-ratio to the Poisson regression models, the odds ratios decreased indicating that the inverse associations of coping with the number of short episodes of sickness absence strengthened, but statistical significance was lost (Model 4). The associations of coping styles with the number of long episodes of sickness absence weakened after adding the ER-ratio to the Poisson regression models as the odds ratios approximated the neutral OR value of 1.

## DISCUSSION

High social coping was associated with fewer short and fewer long episodes of sickness absence, whereas high problem-solving coping was associated with fewer long episodes of sickness absence during one year of follow-up. Thus, our results showed that coping was not only associated with short absences, but also with long episodes of sickness absence. The associations between coping and sickness absence lost significance after controlling for the effort – reward imbalance, which is a recognised measure for work stress.

### Coping styles in relation to sickness absence

The finding that the associations between coping and sickness absence lost significance after controlling for the health status indicates a correlation between coping and health. In a meta-analysis, problem-solving coping styles were found to be positively associated with overall health, whereas distancing, avoidance and wishful thinking were each negatively associated with health outcomes [21]. However, there is little literature on coping styles in relation to sickness absence. Van Rhenen et al. [32] investigated coping styles and sickness absence in a sample of predominantly male postal workers. The authors found that employees with a problem-solving coping style were less likely to be absent from work due to sickness. Our results added that problem-solving coping styles were associated with less sickness absence in terms of fewer long episodes of sickness absence. This contrasts the results Roelen et al. [33], who reported that high problem-solving coping was associated with more short (1-7 consecutive days) episodes of sickness absence among women working in hospital. However, that study had a cross-sectional design and the reliabilities of the coping scales were low.

Besides problem-solving coping, social coping was negatively associated with the number of long episodes of sickness absence, but also with the number of short episodes of sickness absence. Although Van Rhenen et al. [32] also found that seeking social support restricted sickness absence among male postal workers, the prospective association of social coping with low sickness absence contrasts the meta-analytic finding that seeking social support is associated with poor health [21]. However, the relationship between seeking social support and health seems to be inconsistent. On the one hand, it has been reported that seeking social support led to increased health [53]. On the other hand, Folkman and Lazarus [54] stated the opposite, namely that seeking social support led to reduced health. These contradicting results may be explained by the fact that seeking social support includes both problem-focused strategies and emotion-focused strategies [55]. Seeking instrumental support by asking a friend or relative for advice or help can be regarded as a problem-focused coping strategy. Seeking emotional support, such as sympathy and comfort, is an emotion-focused coping strategy.

Finally, our results showed that palliative avoidant coping was unrelated to sickness absence. In our study, the palliative scale and the avoidant scale of the 19-item UCL combined into the same construct. Palliative coping has been reported to reduce the likelihood of sickness absence, whereas avoidant coping increased the likelihood of sickness absence [32]. These contrasting interactions may explain why we failed to show a relationship with sickness absence among female nurses working in hospital care.

### Coping styles and work stress

The effort – reward imbalance model is a validated approach to measure psychosocial work stress by identifying non-reciprocity between occupational efforts spent and rewards received [43,45]. Interactions between stress and coping are basic to understanding the implications of Lazarus' transactional conceptualization of coping [5,18,19]. In our study, statistical significance was lost after adding the ER-ratio to the Poisson regression models. However, the associations between coping and short sickness absence strengthened indicating that work stress in terms of effort – reward imbalance confounded the association between coping and short episodes of sickness absence. Alternatively, the associations between coping and long sickness absence weakened after adding the ER-ratio, which means that some of the variance due to stress was extracted from the coping strategy predictor variables. Possibly, coping strategies are in the causal pathway between effort – reward imbalance and long (i.e., >7 consecutive days) sickness absence. Coping may be a moderator variable between stress and sickness absence. More research using mediation modeling is needed to disentangle the pathways between coping, work stress, and sickness absence. A mediation model seeks to identify and explicate the mechanism that underlies an observed relationship between an independent variable and a dependent variable via the inclusion of a third explanatory variable known as the mediator variable. The mediator variable serves to clarify the nature of the relationship between the independent and dependent variables [55]. Rather than hypothesizing a direct causal relationship between coping styles and sickness absence, cause work stress may elicit coping patterns, which in turn cause sickness absence.

### Strengths and weaknesses of the study

The strength of our study is that we used employer-recorded sickness absence data instead of self-reported sickness absence, which are likely to be recall-biased [56]. Also, the register had complete data for all responders. Common-method bias [57,58] was precluded by using two sources of information, namely the questionnaire for coping styles and the employer's register for sickness absence data. Furthermore, the prospective design excluded misclassification between independent

variables (coping styles) and outcome (sickness absence). The response rate was 68% and could have been higher. Possibly, the associations between coping and short-term sickness absence were overestimated, because participating nurses had more short episodes of sickness absence than non-participants. Also, the questionnaires were not anonymous and this could have influenced the responses. We tried to reduce socially preferred responses by asking the participants to return their questionnaire to the occupational health service instead of their employer. Still, the majority of subjects consistently scored high on items about problem-solving coping, which may reflect that this style is more valued in today's society than for instance avoidant coping. Finally, the study population was a sample of convenience from one hospital that included only female nurses. The results may not apply to men or women in other occupational groups and countries. Therefore, more research must be performed in other companies and countries.

### Practical implications for nurse managers

Problem-solving coping of female nurses working in hospital care was associated with fewer long episodes of sickness absence. Nurse managers can use this knowledge to stimulate problem-solving coping within their nursing teams. Our results also showed that female hospital nurses with high scores on social coping had less short-term sickness absence than those with low scores. Short-term sickness absence is troublesome in the nursing practice, because staffing problems result in reduced nursing efficiency and quality of the work [1,2]. Possibly, nurse managers may reduce short absences by stimulating social coping skills within nursing teams. We recommend examining whether the propagation of social coping skills affects short-term sickness absence in healthcare. Palliative avoidant coping is a type of emotion-focused coping that arises when a person believes that the stressful event must be endured rather than controlled [18]. We found no associations between palliative avoidant coping and sickness absence, which was unexpected considering the literature on emotion-focused coping and health. Therefore, we recommend further research to investigate the impact of this kind of coping on sickness absence in healthcare.

### What is already known about the topic?

- Absence from work due to sickness is high in healthcare and leads to understaffing resulting in an increase in workload and a decrease in the efficiency of care.
- The reasons for sickness absence in healthcare are still poorly understood.
- Sickness absence, especially short-term sickness absence, was found to be related to individual coping.

### What this paper adds

- Problem-solving coping was associated with fewer long (>7 consecutive days) episodes of sickness absence.
- Social coping was associated with fewer short (1-7 consecutive days) episodes and fewer long episodes of sickness absence.
- More research is required to disentangle the pathways between work stress, coping and sickness absence all the more because effort – reward imbalance, which is a recognised work stress parameter, had differential effects on the associations of coping with sickness absence.

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# Inter-physician agreement on the readiness of sick-listed employees to return to work

Published in: Disability and Rehabilitation 2012; 19: (ahead of print)

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## ABSTRACT

**Purpose:** To determine the agreement between occupational physician (OP) ratings of an employee's readiness to return to work (RRTW).

**Method:** Anonymized written vignettes of 132 employees, sick-listed for at least three weeks, were reviewed by five OPs. The OPs intuitively rated RRTW as the ability (knowledge and skills) and willingness (motivation and confidence) of sick-listed employees to resume work. Inter-OP percentages of agreement were calculated and Cohen's kappas ( $\kappa$ ) were determined to correct for agreement by chance.

**Results:** The percentage of agreement between OPs was 57% (range 39-89%) on the ability and 63% (range 48-87%) on the willingness of sick-listed employees to resume work. The mean  $\kappa$  was 0.14 (range -0.21 to 0.79) for ability and 0.25 (range -0.11 to 0.74) for willingness. The OP-rating of RRTW of employees sick-listed with mental disorders did not differ from the OP-rating of RRTW of employees with musculoskeletal disorders.

**Conclusion:** The inter-OP agreement on intuitively rated RRTW showed a wide variability, which accentuates the need for instruments to establish an employee's RRTW and for training in giving well founded return to work recommendations.

## INTRODUCTION

The prevalence of sickness absence is high in many Western societies. In the Netherlands, approximately 56% of women and 49% of men report to have been absent from work due to injuries or illness in the past 12 months, although only 8% of women and 6% of men had been absent longer than six weeks [1]. Employees report sick when symptoms and impairments are too serious to continue work, but previous research has shown that other factors impinge on an employee's decision to stay off work when ill [2-5]. For example, employees with nonspecific disorders are uncertain about their symptoms and frequently play it safe by reporting sick to prevent their symptoms from getting worse [6]. Insecurities and uncertainties about poorly defined symptoms may also adversely affect an employee's readiness to return to work.

### Readiness to Return To Work (RRTW)

The readiness to return to work (RRTW) reflects whether or not a sick-listed employee is ready to resume work. The RRTW-model posits that sick-listed employees go through five stages to get ready for work [7]: pre-contemplation (not yet thinking about resuming work), contemplation (considering return to work in the foreseeable future), preparation (actively gathering information for a plan on return to work in the near future), action (putting a return to work plan into action), and maintenance (staying at work). The RRTW-model considers employee-assessed readiness to resume work. To our opinion, it is to be preferred that occupational health providers establish an employee's RRTW so they can appropriately guide sick-listed employees through the stages of RRTW and recommend work activities.

Hersey and Blanchard's situational leadership theory was developed to train managers in effectively adjusting their leadership style to the readiness level of their employees. The readiness level includes both an employee's ability (i.e. the knowledge and skills) and willingness (i.e. the motivation and confidence) to complete a task [8,9]. This theoretical framework can also be applied to occupational rehabilitation. Employees at the lowest RRTW level lack both the ability and willingness to return to work [9]. 'Enthusiastic beginners' are willing to resume work, but lack the knowledge or skills to do so, whereas 'cautious performers' have the ability to resume work, but lack the willingness. At the highest RRTW level, 'self-reliant achievers' are both able and willing to resume work. The rating of the RRTW level may provide tools for health providers in giving return to work recommendations.

## RRTW and return to work recommendations

The assessment of RRTW and the recommendation of work activities depend on a wide range of factors, among others the severity of illness, intensity of symptoms, functional capacity, physical work demands, and the employee's beliefs and expectations. In the Netherlands, occupational physicians (OPs) advise and guide sick-listed employees during the process of return to work. The OP-rating of an employee's RRTW is usually based on the ideas and plans employees have about resuming work and on the OP's intuitions. Intuitive OP-ratings result from implicate a-priori medical knowledge and experience in occupational healthcare and not from structured protocols, procedures or decision-making. Intuitive judgement is a complex issue in itself and one could argue that OPs use time-saving heuristic decisions to maneuver more efficiently through the assessment of RRTW. However, judgements and recommendations associated with return to work have important consequences for sick-listed employees and their employers. Therefore, the assessment of RRTW and the advice about return to work should be based on normative decision-making in which judgements and decisions result from careful comparisons of logical and rational rules, instead of heuristic decision-making [10].

Three previous studies have examined physicians' agreements on return to work recommendations. Rainville et al. distributed written vignettes describing three patients with low back pain among 142 practicing physicians and found a modest reliability (57% agreement) of return to work recommendations [11]. Chibnall et al. also used written vignettes of patients with chronic low back pain, which were scored by 48 internal medicine physicians. They found a high within-physician consistency, but a very low between-physician agreement (correlation 0.11) in the rating of the occupational disability level [12]. Ikezawa et al. composed three case reports providing detailed information on past medical history, present injury, physical examination findings and occupational demands [13]. The diagnoses for the three case reports were fracture, dislocation, and back pain. There was a high percentage of agreement between 36 health providers in giving return to work recommendations for employees with fractures (97.2%) or dislocations (94.4%). However, the agreement on the back pain scenario was modest (55.6%), which was explained by the fact that the etiology of pain and its relationship with disability are more complex.

## Purpose of the study

To our knowledge, there are no studies that investigated the reliability of OP-rated RRTW. OPs intuitively assess an employee's RRTW by rules of thumb based on their experience in occupational healthcare. How reliable are these intuitive OP-ratings? This study determined the inter-OP agreement in the intuitive ratings of an employee's RRTW level defined according to Hersey and Blanchard's situational leadership theory.

## METHODS

### Study setting

The study was performed by using information of employees working in a somatic hospital, which contracted OP1 as the company physician. The hospital employees reported sick to their manager when they were too ill to attend work. If a sick-listed employee resumed work within the first two weeks of calling in sick, then medical certification of sickness absence was not required. A sick-listed employee visited OP1 in the third week of sickness absence for a medical certification of sickness absence. The consultations of OP1 provided insight into medical factors (symptoms, diagnosis, treatment), work-related factors (work content, work conditions, work environment), private life (family, leisure time activities, life-events, lifestyle), behavioral factors (coping, personality, self-efficacy, sense of coherence), and attitudes towards return to work (sickness absence values, fear-avoidance beliefs, irrational illness cognitions, ideas about resuming work). This information was recorded in the employees' medical files.

### Written vignettes of cases

In 2009, OP1 had consulted 132 hospital employees who had been sick-listed for at least three consecutive weeks. The files of the first consultations with these employees were anonymised and printed in 2010. Besides OP1, four other OPs were asked to review these written vignettes of sick-listed employees. After a brief instruction on Hersey and Blanchard's RRTW levels, all five OPs reviewed the written vignettes on the ability (high – low) and willingness (high – low) of employees to resume work. Ability was rated high if the employee had ideas about resuming work or saw opportunities to accommodate their work. Ability was rated low if the employee was not yet thinking about resuming work. Willingness was rated high if the employee was motivated and confident to resume or accommodate work and low if the employee foresaw problems in resuming work or was not confident for example due irrational beliefs or fear-avoidance behavior.

## Ethical considerations

In the Netherlands, ethical clearance is not required for studies of anonymous data or records, provided that the researcher does not carry out any procedures, which disclose the identity of the involved individuals [14].

## Statistical analysis

The percentage agreement between the ratings of OPs was calculated for all possible 2x2 OP pairs, being: OP1xOP2, OP1xOP3, OP1xOP4, OP1xOP5; OP2xOP3, OP2xOP4, OP2xOP5; OP3xOP4, OP3xOP5, and OP4xOP5. Generally, an agreement of less than 60% is considered poor, 60–80% modest, and >80% good [15]. An important weakness of calculating the percentage of agreement is that it does not take into account the agreement that is expected to occur by chance. The kappa-statistic ( $\kappa$ ) corrects for the fact that observers sometimes agree or disagree simply by chance and Cohen's  $\kappa$  is the most commonly used statistic to estimate inter-observer reliability [15-19]. Cohen's  $\kappa$  was calculated for the inter-observer reliability of all possible 2x2 OP pairs. The  $\kappa$  statistic has a maximum of 1.00 when agreement is perfect and a value of 0.00 when there is no agreement better than chance. Values of  $\kappa=0.81-1.00$  reflect excellent reliability,  $\kappa=0.61-0.80$  good reliability,  $\kappa=0.41-0.60$  moderate reliability,  $\kappa=0.21-0.40$  fair reliability, and  $\kappa=0.00-0.20$  poor reliability. A Cohen's  $\kappa<0.00$  reflects systematic disagreement.

Inter-OP percentages of agreement and  $\kappa$  statistics were also calculated separately for the OP-rating of RRTW of employees sick-listed with mental symptoms and employees sick-listed with musculoskeletal symptoms. The agreement between the OP-ratings of RRTW in both groups of employees were compared by using the non-parametric Mann-Whitney test concluding significance for  $p<0.05$ .

## RESULTS

Five OPs (3 women and 2 men) with a mean age of 45.4 (range 38–57) years, who worked as an OP for on average 10.6 (range 8–16) years, independently studied the written vignettes of 132 employees (118 women and 14 men) with a mean age of 45.0 (standard deviation 9.6) years and sick-listed with mental disorders (n=61), musculoskeletal disorders (n=50), or other disorders (n=21), predominantly cardiovascular, gastrointestinal, and neurological disorders. Based on the vignettes, the OPs rated the employees' ability and willingness to return to work.

### Overall agreement between OPs

The overall percentage agreement was 57% (range 39–89%) for the OP-rating of ability and 63% (range 48–87%) for the willingness of sick-listed employees to resume work. OP1 had consulted all 132 sick-listed employees and may therefore have had fuller information on them. Excluding OP1 from the analyses yielded similar results with a 61% agreement (range 49–89%) on ability and 66% (range 48–87%) agreement on willingness. The inter-OP reliability is shown in table 1 for each possible 2x2 OP-pair. The mean  $\kappa$  for an employee's ability to resume work was 0.14 (range -0.21 to 0.79) with one OP pair showing good agreement, one pair moderate agreement, and one pair fair agreement. Seven pairs showed poor agreement on the rating of the ability to resume work. The mean  $\kappa$  for willingness was 0.25 (range -0.11 to 0.74), with four pairs showing good agreement and six pairs poor agreement.

**TABEL 1. Overall agreement between occupational physicians (OP) in rating the written medical records of 132 employees**

		Ability				Willingness			
		OP2	OP3	OP4	OP5	OP2	OP3	OP4	OP5
		high low	high low	high low	high low				
OP1	high	56 14	32 38	27 43	32 38	49 20	35 34	37 32	30 39
	low	22 40	41 21	26 36	39 23	5 58	32 31	40 23	34 39
$\kappa$		0.45	-0.21	-0.03	-0.17	0.62	0.00	-0.10	-0.11
OP2	high		42 36	33 45	41 37		30 24	31 23	26 28
	low		31 23	20 34	30 24		37 41	46 32	38 40
$\kappa$			-0.04	0.05	-0.03		0.08	-0.02	-0.01
OP3	high			40 33	65 8			60 7	57 10
	low			13 46	6 53			17 48	7 58
$\kappa$				0.32	0.79			0.64	0.74
OP4	high				38 15				60 17
	low				33 46				4 51
$\kappa$					0.28				0.68

The kappa statistic ( $\kappa$ ) is a measure for inter-observer reliability corrected for the agreement expected by chance

## Agreement between OPs on records of employees with mental disorders

Of the 132 employees, 61 (46%) were sick-listed with mental disorders: 51 stress-related disorders and 10 depressive disorders. The inter-OP agreement on the rating of the ability of employees with mental disorders to resume work was 55% (range 36–87%) with a mean  $\kappa=0.05$  (range  $-0.16$  to  $0.52$ ). One 2x2 OP-pair showed moderate agreement, one pair fair agreement, and eight pairs poor agreement (table 2). The inter-OP agreement on the rating of the willingness of employees with mental disorders to resume work was 58% (range 38–87%) with a mean  $\kappa=0.18$  (range  $-0.12$  to  $0.63$ ). Two OP pairs showed good agreement, one pair moderate agreement, one pair fair agreement, and six pairs poor agreement.

**TABLE 2. Agreement between occupational physicians (OP) in rating the written medical records of 61 employees with mental disorders**

	Ability				Willingness			
	OP2 high low	OP3 high low	OP4 high low	OP5 high low	OP2 high low	OP3 high low	OP4 high low	OP5 high low
OP1 high	23 3	19 7	13 13	20 6	20 8	19 9	22 6	17 11
low	17 18	32 3	19 16	31 4	3 30	22 11	29 4	24 9
$\kappa$	<i>0.37</i>	<i>-0.16</i>	<i>-0.04</i>	<i>-0.10</i>	<i>0.63</i>	<i>0.01</i>	<i>-0.09</i>	<i>-0.12</i>
OP2 high		33 7	21 19	33 7		17 6	18 5	15 8
low		18 3	11 10	18 3		24 14	33 5	26 12
$\kappa$		<i>-0.04</i>	<i>0.00</i>	<i>-0.04</i>		<i>0.09</i>	<i>-0.07</i>	<i>-0.03</i>
OP3 high			27 24	47 4			39 2	36 5
low			5 5	4 6			12 8	5 15
$\kappa$			<i>0.02</i>	<i>0.52</i>			<i>0.40</i>	<i>0.63</i>
OP4 high				26 6				38 13
low				25 4				3 7
$\kappa$				<i>-0.05</i>				<i>0.32</i>

The kappa statistic ( $\kappa$ ) is a measure for inter-observer reliability corrected for the agreement expected by chance

## Agreement between OPs on records of employees with musculoskeletal disorders

Of the 132 employees, 50 (38%) were sick-listed with musculoskeletal disorders: 22 employees had arthrosis or spondylosis, 10 injuries, and 6 herniated disks; 12 employees had nonspecific musculoskeletal pain. The inter-OP agreement in the rating of the ability of employees with musculoskeletal disorders to return to work was 59% (range 36–94%) with a mean  $\kappa=0.22$  (range  $-0.21$  to  $0.84$ ). One OP pair showed excellent agreement, three pairs moderate agreement, and six pairs poor agreement on the ability of an employee with musculoskeletal disorders to resume work (table 3). The inter-OP agreement in the rating of the willingness of employees with musculoskeletal disorders to return to work was 68% (range 56–96%) with a mean  $\kappa=0.38$  (range  $0.02$  to  $0.91$ ). Three OP pairs showed excellent agreement, one pair moderate agreement, and six pairs showed poor agreement on the willingness of an employee with musculoskeletal disorders to resume work.

**TABLE 3. Agreement between occupational physicians (OP) in rating the written medical records of 50 employees with musculoskeletal disorders**

		Ability				Willingness			
		OP2	OP3	OP4	OP5	OP2	OP3	OP4	OP5
		high low	high low	high low	high low	high low	high low	high low	high low
OP1	high	25 8	9 24	9 24	8 25	23 7	11 19	10 20	10 20
	low	3 14	4 13	6 11	4 13	1 19	7 13	6 14	6 14
	$\kappa$	<i>0.54</i>	<i>0.03</i>	<i>-0.06</i>	<i>0.01</i>	<i>0.68</i>	<i>0.02</i>	<i>0.03</i>	<i>0.03</i>
OP2	high		6 22	8 20	4 24		11 13	9 15	9 15
	low		7 15	7 15	8 14		7 19	7 19	7 19
	$\kappa$		<i>-0.10</i>	<i>-0.03</i>	<i>-0.21</i>		<i>0.19</i>	<i>0.11</i>	<i>0.11</i>
OP3	high			10 3	11 2			15 3	16 2
	low			5 32	1 36			1 31	0 32
	$\kappa$			<i>0.60</i>	<i>0.84</i>			<i>0.82</i>	<i>0.91</i>
OP4	high				9 6				15 1
	low				3 32				1 33
	$\kappa$				<i>0.55</i>				<i>0.91</i>

The kappa statistic ( $\kappa$ ) is a measure for inter-observer reliability corrected for the agreement expected by chance

The inter-OP reliability of the RRTW-rating of employees sick-listed with mental disorders did not differ significantly from reliability in the RRTW-rating of employees sick-listed with musculoskeletal disorders with Mann-Whitney  $p=0.27$  for ability and  $p=0.08$  for willingness.

## DISCUSSION

The results showed that the agreement between OP-ratings of an employee's readiness to return to work (RRTW) was poor for the ability and modest for the willingness to resume work. The percentages of agreement were in line with those found for return to work recommendations in back pain patients [11-13]. As in the other studies on return to work recommendations, there was a wide variability in the OP-rating of RRTW, ranging from systematic disagreement to good agreement and sometimes even excellent agreement. It should be acknowledged that excellent inter-OP agreement does not necessarily mean that the ratings accurately reflected the actual RRTW. After all, the inter-OP agreement is a measure for the reliability of RRTW-ratings and not for the validity. For example, the inter-OP agreement may be very high if two OPs are equally wrong about an employee's RRTW. The RRTW-ratings should be associated with the progress or outcome of occupational rehabilitation to assess their validity.

The variability of OP-ratings may be explained by the multifactorial diversity of occupational disability. It may also be the result of decisional heuristics if OPs use different rules of thumb when recommending work activities. Rainville et al. reported that a physician's appraisal of pain and perception of severity of symptoms accounted for the variability in work recommendations [11]. Chibnall et al. confirmed that physicians were more consistent in their judgement of occupational disability when pain was high. Physical examination and functional disability information did not add to the consistency of physicians' occupational disability judgements [12]. Obviously, the inter-physician variability in judgements on occupational disability and return to work recommendations is associated with physicians' attitudes and beliefs rather than clinical information.

The poor agreement and wide range in the OP-ratings, found in this study, accentuate the poor reliability of intuitively rated RRTW and underline that return to work recommendations should not be solely based on the knowledge and experience of OPs. Standardized instruments have a greater chance of having acceptable consistency and reliability of work-related assessments [20]. Spanjer et al. found a 76% (range 64–88%) agreement between 12 insurance physicians (IPs) when IPs used standardized instruments to record physical and mental work limitations to rate occupational disability [21].

There is an instrument to assess RRTW, but this tool is employee-administered and scores may be biased by an employee's feelings of uncertainty and fear-avoidance beliefs. It is important to develop a physicians' instrument to assess an employee's RRTW so that OPs can give well founded return to work recommendations. Furthermore, knowledge about an employee's RRTW is also important for managers, so they know how to support and instruct sick-listed employees in the return to work process. Employees who lack the ability to resume work need a task-oriented approach, while employees who lack the willingness are best supported by a relationship-oriented leadership style [14].

## Limitations of the study

Bias in judgements of functional outcomes usually contributes to higher reliability measures [10]. For example, physicians frequently have images of how patients might appear, a phenomenon known as ‘representativeness heuristics’ [13]. It is unlikely that such representativeness heuristics biased the results of this study, unless the OPs had different ideas of how employees at each RRTW level would appear. Public opinions about patients also bias physicians’ judgements of functional outcomes [22]. For example, psychiatric diagnoses elicit stigmatizing responses separate from those directly attributable to symptomatic behavior [23]. Such bias by diagnosis was unlikely, as the OP-ratings of RRTW of employees with mental disorders did not differ from the ratings of employees with musculoskeletal disorders. The OPs rated the written vignettes independent of each other preventing bias by colleague ratings [22]. OP1 and OP2 worked together in a partnership and therefore their ratings may be colleague-biased. Furthermore, OP1 consulted all 132 employees in 2009 and, despite the fact that the study was performed one year later and the written vignettes were anonymized, it could not be ruled out that OP1 may have had fuller information on the employees. However, colleague-bias and bias by fuller information were unlikely, because similar inter-OP agreements were obtained after excluding the ratings of OP1 from the analyses. However, bias by availability heuristics due to recent clinical observations or experiences could not be excluded [22].

Another limitation is that the study only included 5 OPs to rate the written vignettes of sick-listed employees. Including more OPs might increase the precision of the  $\kappa$  statistic and reduce its variability. However, including more OPs would not affect the range of the  $\kappa$  statistics. Moreover, the  $\kappa$  statistics were so low that it is to be expected that the inter-OP agreement on the intuitive RRTW-rating of sick-listed employees will remain unsatisfactory, even after including more OPs. The  $\kappa$  statistic corrects for the observed agreement expected by chance, but may be difficult to interpret when data are skewed or the number of observations is low. Lack of variation in the cell fillings may result in a large discrepancy between the percentages of agreement and  $\kappa$  statistics. However, in this study the inter-OP reliability was poor with regard to both the percentages of agreement and  $\kappa$  statistics.

Another limitation of the study is that the rating of RRTW was based on the medical records and only OP1 had consulted the employees. The medical information was recorded in 2009 without having the aims and purpose of this study in 2010 in mind. Possibly, the medical records lacked the data to appropriately assess an employee’s RRTW and the agreement between OP-ratings may have been better when all OPs had had the opportunity to consult the sick-listed employees [21]. A study design in which all five OPs consult the same sample of sick-listed employees would better reflect the RRTW-ratings in daily occupational healthcare practice. However, the sparse literature on return to work recommendations was based on written vignettes [10,12,13,21]. Also, written vignettes of employees sick-listed

with mental disorders are used to assess the quality of occupational healthcare by checking whether OPs recommend return to work according to the guidelines of the Dutch Occupational Medicine Association. The present results revealed the uncertainty of relying on written vignettes.

Finally, the RRTW ratings were not calibrated and the instruction of OPs on the construct of RRTW was brief, because we wanted to investigate the reliability of intuitive RRTW-ratings. Calibration, for example by pre-measurement of agreement on pilot cases, and more extensive training may improve the inter-OP agreement on RRTW of sick-listed employees.

## CONCLUSION

Despite the shortcomings of the study, we conclude that the inter-OP agreement on the intuitive rating of an employee's RRTW was poor and showed a wide variability. This accentuates the need for instruments to structure OPs' consultations and for training of OPs in the assessment of an employee's RRTW.

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# Leadership styles of nurse managers and registered sickness absence among their nursing staff

Published in: Health Care Management Review 2011; 36(1): 58-66

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## ABSTRACT

**Background:** Sickness absence leads to understaffing and interferes with nursing efficiency and quality. It has been reported in literature that managerial leadership is associated with self-reported sickness absence in the working population.

**Purposes:** This study investigated the relationship between managerial leadership and sickness absence in healthcare by associating nurse managers' leadership styles with registered sickness absence among their nursing staff.

**Methodology:** The cross-sectional study included 699 nurses working in 6 wards (staff range 91 to 140 employees) of a Dutch somatic hospital employing a total of 1,153 persons. The nurse managers heading the wards were asked to complete the Leadership Effectiveness and Adaptability Description (LEAD) questionnaire for situational leadership. The LEAD scores were linked to employer-registered nursing staff sickness absence.

**Findings:** High relationship – high task behaviour (odds ratio [OR] 0.76; 95% confidence interval [CI] 0.65 – 0.85) and high relationship – low task behaviour (OR 0.37; 95% CI 0.14 – 0.98) were inversely related to the number of short (1-7 consecutive days) episodes of sickness absence among the staff. Low relationship – high task styles (OR 2.44; 95% CI 1.14 – 5.22) as well as low relationship – low task styles (OR 2.44; 95% CI 1.26 – 4.71) were positively associated with the number of short episodes of sickness absence. However, the leadership styles only explained 10% of the variance in short episodes of sickness absence.

**Practice implications:** Leadership styles are associated with registered sickness absence. The nursing staff of relationship-oriented nurse managers has fewer short episodes of sickness absence than the staff of task-oriented managers. Training nurse managers in relational leadership styles may reduce understaffing and improve nursing efficiency and quality.

## INTRODUCTION

Absence from work due to sickness is an important problem in many European countries [1]. The number of work days lost due to sickness differ between countries, ranging from 5 to 8 work days lost a year per employee in the Netherlands, the UK, Denmark, and France to more than 20 work days lost a year per employee in Sweden, the Slovak Republic and the Czech Republic [2]. Two groups of factors were found to explain these between country differences: the generosity of social security and sickness absence compensation systems and the population health status [3]. Sickness absence is an important health indicator of the working population. High levels of sickness absence predict future morbidity, early retirement on medical grounds, and mortality [4-6].

In healthcare, sickness absence is a major management problem and high sickness absence levels have led to nursing staff shortages interfering with the efficiency and quality of care [7]. The reasons underlying nurses' absence from work are still poorly understood. Davey et al. [8] reviewed the factors associated with nurses' absenteeism and reported that an individual nurse's prior attendance record was the best predictor of absence from work. Work attitudes, organization, and individual factors provided inconclusive results for absenteeism among nurses. Mixed results were also obtained with regard to nurse manager traits or behaviours such as leadership, influence, and power used by managers to help guide nursing staff members.

Nurse managers aim at maximising nursing productivity and minimising the direct salary costs of sickness absence and the indirect costs of overtime work and temporary staff [9,10]. In the Netherlands, the nurse manager contacts sick-listed employees shortly after they called in sick to express concern and offer assistance to facilitate recovery and return to work. If return to work fails, the employee visits the occupational physician (OP) usually in the third week of absence. The OP determines whether the employee is work incapacitated and, if so, issues a medical sick-leave certificate. The OP also gives an advice about the opportunities to adjust work tasks or work hours. However, the nurse manager shoulders the responsibility to follow the advice and arrange provisional duties engaging sick-listed nurses in work and facilitating return to work.

Managerial leadership is assumed to be associated with sickness absence, but there is little literature to support this hypothesis. In a recent systematic review, Kuopala et al. [11] found moderate associations (RR = 0.73; 95% CI 0.70 – 0.83) between leadership and sickness absence in the working population studying 27 out of 109 articles that were retrieved from Medline and PyschInfo databases using the main search terms leadership, job satisfaction, well-being, sick leave, and disability pension. In healthcare, social supportive leadership was found to contribute positively to nurses' job satisfaction and meaningfulness of their work, whereas autocratic leadership led to health complaints and absenteeism [12]. It has also been reported

that a nurse manager's influence in personnel resources was inversely related to nursing staff absenteeism in two out of four hospitals [13]. The purpose of this study was to further investigate the relationship between managerial leadership and sickness absence in healthcare, associating nurse managers' leadership styles with registered sickness absence among the nursing staff.

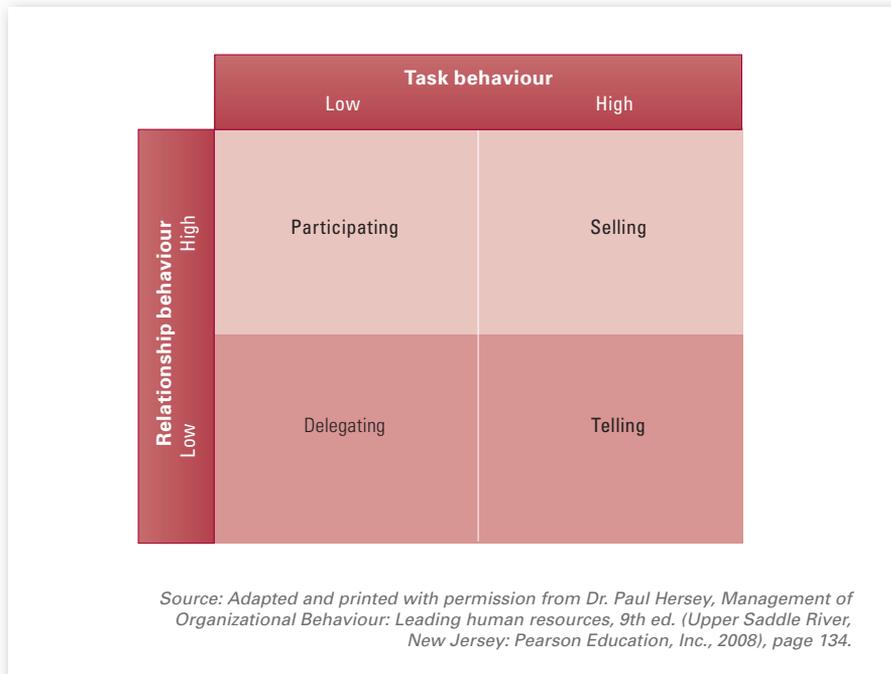
## Conceptual framework

The definitions and typologies of leadership are numerous. In this study, we defined leadership as the process of influencing the activities of an individual or a group in efforts to a goal achievement in a given situation [14].

Interest in leadership has increased during the twentieth century. Early leadership theories focused on traits and behaviours that distinguish leaders from followers. Later theories looked at other variables such as situational factors and leaders' skills. Nowadays, a couple leadership theories dominate the research scene, particularly the theories on transactional leadership, transformational leadership, situational leadership, and authentic leadership. Transactional leaders are interested in looking out for oneself and having exchange benefits with their employees and clarifying a sense of duty with rewards and punishments to reach goals [15]. A transformational leader reaches goals by 'transforming' employees to help each other, to look out for each other, to be encouraging and harmonious, and to look out for the organization as a whole. Authentic leaders show openness, trustworthiness, and reliability and are perceived by employees as believable and compassionate.

## The theory of situational leadership

The situational leadership theory of Hersey et al. [16] serves as the theoretical framework of this study. Based on two dimensions (relationship and task), four leadership styles are recognized, as is shown in figure 1: high relationship – high task behaviour (selling style), high relationship – low task behaviour (participating style), low relationship – high task behaviour (telling style), and low relationship – low task behaviour (delegating style). There is no single leadership style that is good in terms of appropriate for all situations. An effective leader is one who can adapt his/her leadership style to meet the needs of employees and situations [17].



**FIGURE 1. Leadership styles according to the situational leadership theory**

The situational leadership theory identifies two basic leadership styles. The relationship-oriented democratic (selling or participating) leader addresses the feelings, attitudes, and satisfaction of the members of the group. The task-oriented autocratic (telling) leader pertains to the problem at hand rather than the personal satisfaction of the group members [18,19]. In the literature, job satisfaction, job performance, and productivity have been investigated in relation to situational leadership [11,16,17]. Receiving recognition or respect from a relationship-oriented manager contributed to job satisfaction, productivity, and, to a lesser degree, to organizational commitment among nurses working in US hospitals in Seattle and Los Angeles [20]. Conversely, feeling unappreciated or being criticised by a task-oriented manager was identified as causing dissatisfaction, non-productivity, and a lack of commitment among nurses working in a Los Angeles county hospital [21].

Recently, it was reported that managerial leadership is associated with self-reported sickness absence among gainfully employed Swedish people aged 16 to 64 years. Inspirational leadership was associated with a lower rate of short (<7 days) episodes of sickness absence, whereas autocratic leadership was related to a greater number of days of sickness absence [22]. However, there is a poor association between self-reported sickness absence and actual registered sickness absence in the working population as regards both the number and duration of sickness absence episodes [23-25]. Therefore, we investigated the relationship of leadership styles

with employer-registered sickness absence. We addressed the research question whether the leadership styles of the situational leadership theory were associated with registered sickness absence in healthcare.

## METHODS

### Study population

The study population was enlisted from a somatic hospital in the Dutch province Friesland employing a total of 1,153 persons of whom 699 worked at least three years in clinical wards ( $n = 495$ ) or the outpatient's clinic ( $n = 204$ ). These 699 employees were eligible for the study and received a questionnaire from the human resources department of the hospital in autumn 2008. They were asked to return the completed questionnaire to ArboNed Occupational Health Services. The self-administered questionnaire assessed six scales: general health and mental health [27], job demands and control [26], and work efforts and rewards [28]. General and mental health scores were expressed as percentages of the maximum score possible for each subscale. The score for job demands was divided by the score for job control to yield a demand to control ratio (DC-ratio). Accordingly, the score for work efforts was divided by the score for rewards into an effort/reward ratio (ER-ratio), which is a recognized measure for job strain [28].

### LEAD-Self questionnaire

The 699 employees worked in 6 wards (4 clinical wards and 2 outpatient wards) with staffs ranging between 91 and 140 employees, which were headed by the same manager for at least the last 3 years. The 6 nurse managers worked in the same ward throughout the entire period under study. They did not move to other wards and took no extended periods of work leave. The nurse managers completed the Leadership Effectiveness and Adaptability Description (LEAD) questionnaire in autumn 2008. The LEAD was first introduced by Hersey et al. in 1974 and measures leader behaviours as perceived by managers (LEAD-Self) and followers (LEAD-Other). The LEAD-Self has been used in a nursing setting [29] and assesses a leader's style by 12 management situational questions with four possible responses each, corresponding to the four styles of the situational leadership theory (figure 1). Several validity studies showed satisfactory results supporting the four style dimensions; in 46 of the 48 item options, the expected relationship was found. Across a six-week interval, 75% of the managers maintained their dominant style and 71% their back-up style [30]. The contingency coefficients were both 0.71 and each was significant at the 0.01 level.

The managers' LEAD-Self scores were linked cross-sectionally to the registered sickness absence of their nursing team in the period from 2006 to 2008. Ethical approval was sought from the Medical Ethics Committee of the University Medical Center Groningen, who advised that ethical approval was not required for this study. All employees agreed to the use of their sickness absence data and questionnaire results for scientific analysis on group level.

### Sickness absence

Sickness absence is defined as not coming to work when scheduled due to sickness. Sickness absence can be measured in different ways. Duration measures usually tally the total number of days lost due to sickness regardless of the number of episodes and provide an index for involuntary sickness absence [31]. Frequency measures provide an index for 'voluntary' absences without clear medical causes [31,32]. To measure the frequency, each episode of sickness absence is counted, usually distinguishing between short episodes and long episodes. Long episodes of sickness absence are largely determined by medical impairments and disability, whereas short episodes are considered to reflect a coping behaviour [33-36].

In this study, we tallied the calendar days between the first and last day of sickness absence registered by the employer, irrespective of the actual working hours and regarding partial days off work as full days of sickness absence. The total number of registered days of sickness absence of each employee between 1 January 2006 and 31 December 2008 was dichotomised by median (20 days) split. We also counted the number of registered episodes of sickness absence in this period for each individual and distinguished between short episodes lasting 1-7 days and long episodes lasting > 7 days. The number of short episodes of sickness absence was dichotomised by median (2 episodes) split. The number of long episodes of sickness absence was dichotomised into no long episodes and one or more long episodes.

### Statistical analysis

Leadership styles were associated with the dichotomised sickness absence measures using multiple logistic regression analysis. The leadership scores did not meet the linearity assumption of ordinal data in logistic regression. Therefore, the scores were recoded into dummies and inserted as categorical variables into all regression analyses. The study presents odds ratios (ORs) and their 95% confidence intervals (95% CI) with a significance level of 5%.

## RESULTS

Of the 699 questionnaires, 570 were returned resulting in an overall response rate of 82% ranging between 76% and 84% for the different wards. The characteristics of the 570 participants are summarised in Table 1. There were differences between the wards in seniority, hours worked, general health, and work strain in terms of demand/control ratios and effort/reward ratios. Therefore, these factors were included as covariates in the multiple logistic regression analysis.

Two managers had a two-style profile with a dominant high relationship – high task style and a back-up high relationship – low task style (Table 2). Three managers had a three-style profile and one manager scored on all four styles.

The leadership style, characterised by high relationship and high task behaviour (selling style), was inversely associated with the number of days of sickness absence (odds ratio [OR] = 0.60; 95% confidence interval [CI] 0.41 to 0.84) and short episodes of sickness absence (OR = 0.61; 95% CI 0.48 to 0.72). Low relationship and low task behaviour (delegating style), was positively related to the number of days of sickness absence (OR = 2.82; 95% CI 1.50 to 5.29) and short episodes of sickness absence (OR = 2.40; 95% CI 1.29 to 4.46). A low relationship and high task (telling) leadership style was also positively associated with the number of days of sickness absence (OR = 2.68; 95% CI 1.36 to 5.27) and short episodes of sickness absence (OR = 3.02; 95% CI 1.52 to 5.98). These unadjusted associations explained only 8% of the variance in days of sickness absence, 10% of the variance in short episodes of sickness absence, and 2% of the variance in long episodes of sickness absence.

**TABLE 1. Characteristics of the study population in 2008**

The table presents mean (standard deviation) of age, number of hours worked, and seniority of 570 participants in 2008 as well as their sickness absence characteristics in percentiles P25, P50 (i.e. median), and P75.

<b>N</b>		570
	<b>Women (%)</b>	541 (95%)
	<b>Men (%)</b>	29 (5%)
<b>Age</b>		41.6 (9.1)
<b>Hours worked</b>		719 (250)
<b>Years employed</b>		13.8 (8.0)
<b>General health</b>		79.9 (17.7)
<b>Mental health</b>		86.7 (11.1)
<b>Demand/control ratio</b>		1.11 (0.34)
<b>Effort/reward ratio</b>		1.06 (0.34)
<b>Number of sickness absence days</b>	<b>P25</b>	5.0
	<b>P50</b>	20.0
	<b>P75</b>	71.5
<b>Number of short sickness absence episodes</b>	<b>P25</b>	1.0
	<b>P50</b>	2.0
	<b>P75</b>	4.5
<b>Number of long sickness absence episodes</b>	<b>P25</b>	0.0
	<b>P50</b>	0.0
	<b>P75</b>	1.0

**TABLE 2. Leadership style scores on the LEAD-Self Questionnaires**

	High relationship		Low relationship	
	High task	Low task	High task	Low task
<b>Manager of ward:</b>				
ward 1	8	4	0	0
ward 2	10	2	0	0
ward 3	3	8	1	0
ward 4	3	0	3	6
ward 5	4	4	2	2
ward 6	5	4	3	0

**TABLE 3. Adjusted multiple logistic regression model of the association between leadership styles and sickness absence**

The table shows odds ratios and their 95% confidence intervals between brackets of associations between leadership behaviours and sickness absence adjusted for hours worked, seniority, health, demand/control ratio, and effort/reward ratio; \*  $p < 0.05$ , \*\*  $p < 0.01$ .

Leadership style	Sickness absence days	Sickness absence episodes	
		Short (1-7 days)	Long (>7 days)
<b>High relationship, high task</b>			
score 0 - 3	1	1	1
score 4 - 7	0.89 (0.78-1.34)	0.72 (0.61-0.83)**	1.14 (0.50-2.60)
score $\geq$ 8	1.10 (0.97-1.56)	0.76 (0.65-0.85)**	1.09 (0.51-2.33)
<b>High relationship, low task</b>			
score 0 - 2	1	1	1
score 3 - 7	0.63 (0.27-1.50)	0.63 (0.26-1.51)	0.86 (0.36-2.05)
score $\geq$ 8	0.67 (0.26-1.72)	0.37 (0.14-0.98)*	0.97 (0.38-2.48)
<b>Low relationship, high task</b>			
score 0	1	1	1
score 1 - 2	1.91 (0.79-4.60)	1.77 (0.73-4.29)	1.08 (0.53-2.20)
score $\geq$ 3	1.87 (0.89-3.91)	2.44 (1.14-5.22)*	1.05 (0.50-2.18)
<b>Low relationship, low task</b>			
score 0	1	1	1
score $\geq$ 1	2.62 (1.36-5.09)**	2.44 (1.26-4.71)**	1.73 (0.91-3.29)
	0.150	0.204	0.110
<b>Nagelkerke pseudo <math>R^2</math></b>			

After adjustment for seniority, hours worked, general health, DC-ratio, and ER-ratio the relationships weakened, though an inverse relationship (OR = 0.76; 95% CI 0.65 to 0.85) remained between the selling leadership style and the number of short episodes of sickness absence (Table 3). The delegating leadership style also remained positively associated with the number of days (OR = 2.62; 95% CI 1.36 to 5.09) and short episodes (OR = 2.44; 95% CI 1.26 to 4.71) of sickness absence after controlling for seniority, hours worked, general health, DC-ratio, and ER-ratio.

The adjusted associations explained 15% (Nagelkerke pseudo  $R^2 = 0.150$ ) of the variance in days of sickness absence, 20% (Nagelkerke pseudo  $R^2 = 0.204$ ) of the variance in short episodes of sickness absence, and 11% (Nagelkerke pseudo  $R^2 = 0.110$ ) of the variance in long episodes of sickness absence.

## DISCUSSION

Research on leadership in healthcare has been primarily qualitative and descriptive, and only 4% of articles presented quantitative data in 2002 [37]. To date, still few research articles correlate competencies or styles of leadership with quantitative outcomes. Our study investigated leadership styles in relation to the quantitative outcome of sickness absence in terms of employer-registered days and episodes absent from work due to sickness. In line with findings in the general working population [11] and in healthcare [38], the results show that relationship-oriented leadership styles are inversely related to sickness absence, which supports the central belief that relationships are the core of nursing leadership [39]. The theory of authentic leadership accentuates the importance of the relationship between leader and followers. The key concept of the theory is that leaders strive for openness, transparency, and honesty in relationships [40,41]. Authentic leaders can stimulate employees' attitudes such as engagement, commitment, and motivation to improve their work and performance through the process of personal identification with employees and social identification with the organization [42].

We found that relationship-oriented leaders have lower short-term absence among their nursing staff. Short-term absences are assumed to reflect 'voluntary' absenteeism that is absence from work without medical impairments [31,32]. Sickness absence can be regarded as a passive coping strategy, withdrawing from the strain of work [43]. Alternatively, taking sick-leave can also be considered a functional coping strategy of persons who wish to maintain their health and work capacity, and as such it is the opposite of withdrawal behaviour [44]. In this regard, it is explicable that relationship-oriented leadership styles are associated with fewer short episodes of sickness absence among staff, but not with fewer long episodes the latter being mostly due to medical impairments and disability on which managers usually have little influence.

### Strengths and weaknesses of the study

The strength of our study is that we used recorded sickness absence data instead of self-reported absence and we had complete sickness absence data for a 3-year period. The use of sickness absence data, which were registered over a longer period, excluded the effects of recall bias and temporary increased individual absence levels. All employees in the study worked in healthcare and were comparable with regard to work conditions, working environment, and organizational policies.

The major limitation of the study is its cross-sectional design precluding prospective associations and causal relations. Also, the subjects in our study population were working in the hospital for at least three years and may be a selection of nurses who are healthy and enjoy their work, work conditions, and working

environment. Moreover, the study was confined to nurses working in one hospital and it has been reported that there are differences in sickness absence practices and cultures between occupations and companies [45].

Furthermore, leadership styles were based on information of nurse managers themselves. Actually, asking employees to rate their leaders provides the best construct validity of leadership [46-48]. The nurses' rating of their managers may provide a higher explained variance in sickness absence. However, these data were not available. Furthermore, it is known that the majority of LEAD-Self instrument respondents consistently score in the high task – high relationship leadership style category [49,50]. This clustering may indicate that respondents 'knew' how they should score and apparently reflects some form of self-deception of the respondents. We tried to cope with this problem by including all scores in our analysis and not only the dominant leadership style. Nevertheless, most nurse managers reported a high relationship and high task behaviour, which is in agreement with the findings of Johnson and D'Argenio [29].

### Practice implications

Understanding the relationship between nurse managers' leadership and nursing performance is critical to the management of a nursing ward. Leaders are frequently unaware of how their behaviour influences followers. Managerial behaviour affects nurses' job satisfaction, performance, and productivity [38]. Sickness absence levels are a measurable proxy for productivity losses in terms of lost work days in nursing teams. Our results show that sickness absence levels, especially the number of days and short episodes of sickness absence, depend on the leadership style with sickness absence levels being lower among the staff of relationship-oriented leaders. These results show the importance of nurse manager skills and behaviours in influencing understaffing and therefore the productivity, efficiency, and quality of nursing.

Although we found significant associations, the leadership style explained up to 10% of the variance in sickness absence, which may be the result of managers assessing their own leadership style. McNeese (1997) concluded that leadership behaviours accounted for 9-15% of the variance in productivity, 11-27% of the variance in job satisfaction, and 16-29% of the variance in organizational commitment. Later, Chiok Foong Loke (2001) reported that 9% of productivity, 29% of job satisfaction, and 22% of organizational commitment among registered nurses working in a hospital in Singapore was explained by leadership behaviour. Our results show that the variance in sickness absence, explained by leadership styles, was of similar magnitude as the percentage of explained variance in productivity in the abovementioned studies. Further research is required to investigate the impact of leadership styles of nurse managers on sickness absence and staff shortages of nursing teams.

Leadership can be developed through specific educational activities and by modeling and practicing competencies [52]. It is possible to obtain short-term changes in leadership behaviour through leadership training as part of a management development series for nurse managers [29]. Six months post-training, a 22% change toward a more even distribution of leadership scores was observed among 11 nurse managers. However, the authors did not report the influence of these changes on employee performance. Future longitudinal research has to reveal the effects of management changes and management training on staff productivity and sickness absence levels.

Supportive interpersonal relationships at work, workplace culture, and approaches to staff management are important for developing healthy workplaces [53]. Relationship-oriented authentic leadership is also required to create healthy work environments for nursing practice [54], for instance by engaging nurses in the work environment and promoting positive behaviours. The ability to create a common vision and involve employees in that vision may well be the most important aspect of leadership behaviour in healthcare [20]. Therefore, organizations that endeavour to maximize productivity and minimize costs may consider assessing the preferred leadership styles of new nurse managers.

In conclusion, leadership styles were found to be associated with registered sickness absence. The nursing staff of relationship-oriented nurse managers had fewer short episodes of sickness absence than the staff of task-oriented managers. Organizational efforts and manager trainings to develop relationship-oriented leadership styles may reduce understaffing and improve nursing efficiency and quality.

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# Leadership effectiveness and recorded sickness absence among nursing staff: a cross- sectional pilot study

Published in: *Journal of Nursing Management* 2011; 19: 585–595

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## ABSTRACT

**Aim:** To investigate nurse managers' leadership behavior in relation to the sickness absence records of nursing staff.

**Background:** Sickness absence is high in healthcare and interferes with nursing efficiency and quality. Nurse managers' leadership behavior may be associated with nursing staff sickness absence.

**Method:** Six nurse managers completed the Leadership Effectiveness and Adaptability Description (LEAD) questionnaire, which assesses leadership behavior in terms of leadership flexibility (i.e. the range of leadership styles) and effectiveness (i.e., using the leadership style that is appropriate for a given situation). LEAD scores were linked to the number of recorded days of sickness absence and both short (1-7 days) and long (>7 days) episodes of sickness absence in the nursing teams.

**Results:** Leadership flexibility of nurse managers was not associated with sickness absence among nurses. High leadership effectiveness was associated with fewer days and fewer short episodes of sickness absence. Leadership effectiveness was unrelated to the number of long episodes of sickness absence.

**Conclusion:** Effective nurse managers had less short-term sickness absence in their nursing teams.

**Implications for nursing management:** If these tentative cross-sectional associations are confirmed in longitudinal studies including more departments, then training effective leadership may improve the management of short-term sickness absence.

## INTRODUCTION

The role of nurse managers is moving from administrative controllers to supportive coaches [1]. This changing role implies that nurse managers have to change their leadership style from task-oriented to relationship-oriented leadership. The theories of transformational leadership [2] and authentic leadership [3] emphasize relationship management. Relationship-oriented managers increase the self-efficacy of employees, which is the belief of being capable to perform tasks or achieve goals [4]. They also positively influence the working environment and foster the staff's organizational commitment. Hence, relationship-oriented nurse managers improve both individual performance and nursing team achievement [5].

### Leadership and nursing outcomes

The most common definition of leadership includes four elements: leadership is 1) a process that 2) entails influence, 3) occurs within a group, setting or context and 4) involves achieving goals that reflect a common vision [6]. Nurse managers often work in close proximity to the nursing team. Therefore, leadership practices of nurse managers positively or negatively influence nursing outcomes [7]. Leadership behavior has been reported to account for 9-15% of the variance in nursing productivity, 11-27% of the variance in nurses' job satisfaction, and 16-29% of the variance in nurses' organizational commitment [8-10]. In a recent review, nursing outcomes in terms of effectiveness and productivity were reported to be higher in association with relationship-oriented management, such as transformational leadership and charismatic leadership [11]. Task-oriented transactional leadership, rewarding or punishing the nursing team's performance, as well as laissez-faire leadership were associated with reduced effectiveness and productivity of nursing teams.

Cummings et al. [11] have reviewed in a very recent study staff health as a nursing outcome in relation to leadership. The authors found that nursing staff health was better and both anxiety and stress were lower with relationship-oriented supportive leadership. Dissonant leadership, characterized by pacesetting and commanding styles, and transactional leadership were associated with negative health outcomes, such as greater emotional exhaustion and poorer emotional health among nurses. It was concluded that transformational and relational leadership were needed to enhance nurse satisfaction and create healthy work environments.

If relationship-oriented leadership is associated with better health and healthier work environments, then one should expect low sickness absence in nursing teams led by relationship-oriented managers. To investigate this association, we performed a comprehensive literature search in the Medline database. We found 126 studies of which some, reviewed by Shirey [12], reported that social support at work was associated with decreased nursing stress and reduced sickness absence. However, only one study investigated the association between leadership beha-

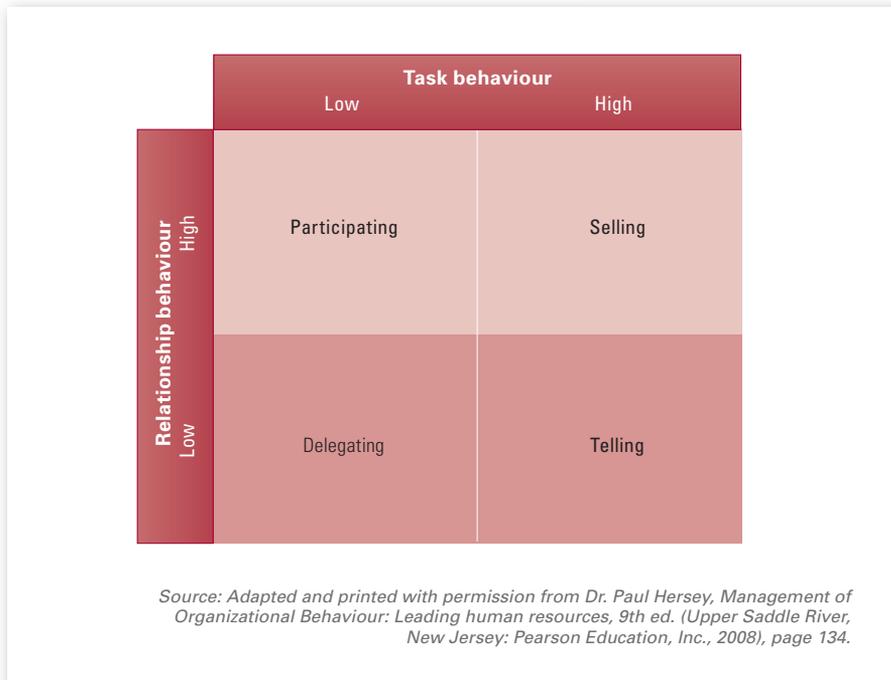
avior and sickness absence. It was reported from this study reported that autocratic leadership had adverse health effects resulting in absenteeism [13].

Sickness absence is a difficult problem as it may be due to illness, but absenteeism may also reflect an unplanned time off work for other reasons. However, it is important to investigate the association between leadership and sickness absence in more detail, because sickness absence is high in healthcare and results in staff shortages interfering with the efficiency and quality of care [14]. Although not all sickness absence can be managed by a healthy work environment, nurse managers are responsible to carry out sickness absence policies in a growing number of healthcare organizations [15]. Therefore, this study assessed the associations between nurse managers' leadership behavior and sickness absence in nursing teams.

### Conceptual framework of situational leadership

Although criticized because of inconsistencies, conceptual ambiguity, and incompleteness [16] and despite emerging new leadership theories [2,3,17], the situational leadership theory is still a popular framework. The situational leadership theory remains among the less well-substantiated leadership models, but has stood the test of time as it is well known and commonly used to train leaders. The situational leadership theory is easily understood, intuitively appealing, and applicable to a wide range of leadership settings [18]. Furthermore, the theory is prescriptive in nature, while other leadership approaches are comparatively more descriptive, and offers guidelines for interpersonal understanding, which is especially convenient for disabled employees [19]. The use of the situational leadership theory for employees with disabilities allows managers to acknowledge personal biases and to individualize management to the disabled employee. Due to its focus on specific tasks of employees and the formulation of effective relationships with employees, situational leadership creates a framework to meet the specific needs of disabled employees and how they are managed. Research that combines leadership styles with the readiness of disabled employees will lead to more understanding in the workplace, which has the potential to thwart negative biases towards employees with disabilities.

The situational leadership theory identifies two basic leadership styles: the task-oriented autocratic leader and the relationship-oriented democratic leader. Task-oriented leaders are likely to organize and define the role of the members of their group, whereas relationship-oriented leaders are likely to maintain personal relationships between themselves and members of their group. Based on the extent of task behavior and relationship behavior, four leadership styles are described: telling, selling, participating, or delegating (Figure 1). No single leadership style is appropriate for all situations [20]. Leaders need to adjust their leadership style depending upon the situation.



**FIGURE 1. Leadership styles according to the situational leadership theory**

The degree to which leaders can adapt their leadership styles is known as leadership flexibility. The effectiveness of a leadership style depends on the context. Effective managers use styles that are appropriate for the given situation. Managers are effective as long as they adjust their leadership style appropriately to the readiness or maturity levels of employees or teams [21]. With this attention to the readiness levels of employees, the situational leadership theory is well applicable for sick-listed persons. Having a manager who is aware of the readiness level of sick-listed employees and recognizes individual work capacities provides comfort and understanding between manager and employee [19]. In addition, the employee's willingness to work as discussed by Hersey and Johnson [22] can be improved by the choice of the appropriate leadership style.

### Study aim and hypothesis

The aim of this cross-sectional study was to assess the associations of nursing leadership behavior in terms of leadership flexibility and leadership effectiveness with sickness absence among the nursing staff. We hypothesized that sickness absence among the nursing staff of nurse managers, who effectively adjust their leadership styles to individual nurses and nursing teams, is lower compared to the staff of ineffective managers.

## METHODS

### Subjects and materials

The study population was retrieved from a Dutch hospital, staffing a total of 1,153 employees. To ensure a homogeneous sample with regard to the working environment, 699 nurses (664 women and 35 men), with an average age of 41.6 (standard deviation [SD] = 9.1) years, were included in the study population. The nurses worked in one of the four clinical wards ( $n = 495$ ) or one of two departments of the outpatient clinic ( $n = 204$ ) of the hospital. The study population was employed in the hospital for on average 13.8 (SD = 8.0) years and with an average of 719 (SD = 250) work hours per year. The individual sickness absence records in the time period from January 2006 to December 2008 were linked to the nurse manager's leadership flexibility and effectiveness. It was assumed that differences in health and working conditions of the nursing teams could confound the association between sickness absence in the nursing teams and the nurse managers' leadership behavior. Therefore, the nurses were surveyed in Autumn 2008 to assess their health and working conditions.

### Instruments

The nurses' general health and mental health was measured with a 12-item short form (SF-12) of the RAND-36 assessing the health-related quality of life [23, 24]. General health was measured with a single item with response categories 1 = "poor", 2 = "moderate", 3 = "good" and 4 = "excellent". Mental health was measured with 5 items (Cronbach's  $\alpha = 0.71$  in this study) on mood and anxiety with response categories 1 = "rarely", 2 = "sometimes", 3 = "often" and 4 = "most of the time". General health and mental health were expressed as percentage of the maximum score, with higher percentages representing better health. The questionnaire also measured working conditions in terms of efforts and rewards [25]. The efforts sub-scale consisted of 5 items (Cronbach's  $\alpha = 0.70$  in this study) referring to workload, time pressure, overtime work, work responsibilities and frequent work interruptions. The sub-scale rewards contained 4 items (Cronbach's  $\alpha = 0.73$  in this study) on esteem reward (respect from supervisor and colleagues, educational opportunities, and job security) and 1 item on monetary gratification. Items were scored as 1 = "rarely", 2 = "sometimes", 3 = "often" and 4 = "most of the time" with increasing scores reflecting higher efforts and rewards. The effort/reward (ER) ratio was calculated by dividing the efforts score by the score on rewards [26]. ER-ratios higher than one ( $>1$ ) reflect work strain as work efforts are higher than the rewards from work [27].

## Sickness absence register

Sickness absence data were obtained from the hospital's Human Resources' register. Sickness absence is recorded by the Human Resources administrator irrespective of its duration. Thus, even one day of absence from work due to illness is recorded in this register. Nurses report sick to their manager and the manager sends the sick report to the Human Resources administration for recording purposes. According to the hospital's policy, employees usually visit an occupational physician in the third week of sickness absence for a medical certification of sick leave and socio-medical guidance supporting return to work. When nurses resume work, the manager sends a recovery report to the Human Resources administration. The accuracy of the sickness absence register is included in the hospital's assessment by the Netherlands Institute for Accreditation in Health Care according to the International Accreditation Program of the International Society for Quality in Health Care (ISQua).

The calendar days between the first and last day of sickness absence were counted as days of sickness absence, irrespective of the actual working hours and regarding partial days off work as full days of sickness absence. The total number of days of sickness absence was accumulated in the period from January 2006 to December 2008 for each nurse. Likewise, the number of episodes of sickness absence was tallied for each nurse, distinguishing between short episodes (lasting 1 to 7 days) and long episodes (lasting longer than 7 consecutive days). Episodes of sickness absence were cut off at the end of the study, i.e. December 31 2008.

## Leadership effectiveness

The six wards were led by the same manager (i.e. 3 men and 3 women with an average age of 50.8 years, SD = 5.1 years) in the period from January 2006 to December 2008. The leadership behavior of the nurse managers was assessed with the Leadership Effectiveness and Adaptability Description (LEAD) questionnaire, which was first introduced by Hersey and Blanchard in the mid 1970's. The LEAD has been proven reliable and valid for use in leadership research [28]. The LEAD describes 12 managerial situations, for example 'Your employees are not responding lately to your friendly conversation and obvious concern for their welfare. Their performance is declining rapidly'. All situations have four alternative responses, in the example: A) Emphasize the use of uniform procedures and the necessity for task accomplishment, B) Make yourself available for discussion but not push your involvement, C) Talk with employees and then set goals, and D) Intentionally not intervene. The four responses reflect different leadership styles, in the example response A reflects a telling style, B a participating style, C a selling style, and response D a delegating style (see Figure 1).

All six managers completed the LEAD-Self questionnaire in Autumn 2008 and returned it to the occupational physician. The number of different styles was used as an indicator for leadership flexibility, ranging between 1 (i.e., the 12 responses corresponded to one style) and 4 (i.e., the 12 responses included all four styles). The leadership style dimensions had a satisfactory validity: 46 of the 48 item options confirmed the anticipated style. Across a six-week test-retest reliability interval, 75% of the managers maintained their dominant style and 71% their back-up style [29].

Leadership effectiveness was measured by scoring how appropriately the leadership style matched the given situation [21]. In the earlier example, response A scores +2, response C +1, response B -1, and response D -2, because the latter represents the most inappropriate behavior in the given situation [22]. Thus, the highest possible score for all 12 management situational questions would be +24 and the lowest score -24. A positive score represents an effective leader and a negative score an ineffective leader [21]. Validity scores ranged from 0.11 to 0.52 for the 12 items and 10 of the 12 coefficients were higher than 0.25. Eleven coefficients were significant at the 1% level and one coefficient at the 5% level. Across a six-week interval, the correlation between effectiveness scores was 0.69 [29].

## Statistical analysis

Based on the distribution of the accumulated days of sickness absence, we created staff groups of 0-5 days (n=181), 6-20 days (n=178), 21-75 days (n=168), and over 75 days (n=172) of sickness absence between January 2006 and December 2008. It should be acknowledged that these are the accumulated days during a three year period and not necessarily consecutive days of sickness absence. The staff groups were used as outcome variable in two separate ordinal regression analyses [30]: one including the managers' flexibility as the independent variable and the other including the managers' effectiveness. We used the logit link function, which has the advantage that the ordinal regression coefficients can be interpreted as odds ratios. In a forward step, demographic variables (i.e. age, duration of employment, and hours worked) were added to the crude ordinal regression model. A second forward step added the staff scores on general health, mental health, and ER-ratio. The Nagelkerke method was used to calculate the percentage of explained variance within the models.

The number of short and long episodes of sickness absence between January 2006 and December 2008 was used as the outcome variable in four separate Poisson regression analyses (two for short episodes and two for long episodes). Of the Poisson regression models for short and long episodes, one included the managers' flexibility as the independent variable and the other the managers' effectiveness. In a forward step, demographic variables (i.e. age, duration of employment, and hours worked) were added to the crude Poisson models. A second forward step

added the staff scores on general health, mental health, and ER-ratio. The pseudoR<sup>2</sup> of each Poisson model was computed according to Heinzl & Mittlböck [31]. Leadership flexibility scores were inserted as a categorical variable in all regression models with high flexibility (i.e., score = 4) as the reference category. Leadership effectiveness was also inserted as a categorical variable in all regression models: high effectiveness (scores 12 and 15) and moderate effectiveness (scores 5 and 6) were compared to the reference category of low effectiveness (scores -3 and -2).

Data analysis was performed using statistical Package for Social Sciences 16 for windows [SPSS Inc., Chicago, IL, USA]. The study presents odds ratios (OR) and their 95% confidence intervals (95% CI). The significance level was set at  $\alpha = 0.05$ .

### Ethical considerations

The Medical Ethics Committee of the University Medical Center Groningen advised us that ethical approval was not required for this questionnaire survey. On the completed questionnaire, the employees gave informed consent to the use of their sickness absence records and survey results for scientific analysis on the individual level.

## RESULTS

Of the distributed 699 questionnaires, 570 were returned to the occupational physician resulting in an overall response rate of 82%. The nurses had an average of 65.8 (median 20) days of sickness absence between January 2006 and December 2008 and an average of 4.0 episodes of sickness absence, of which 3.1 (median 2) were short episodes and 0.9 (median 0) were long episodes.

Participating nurses scored a general health of 79.9 (SD = 17.7) and a mental health of 86.7 (SD = 11.1) compared to 74.7 and 81.4, respectively, in a sample of 2,967 Dutch women [32]. The highest general health score (84.4, SD = 13.2) was obtained in ward 3 and the lowest (76.7, SD = 13.9) in ward 4, but the differences were not significant ( $p = .06$ ). Likewise, the wards did not differ in mental health (Table 1). The average ER-ratio was 1.06 (SD = 0.34) for the total respondent population. The ER-ratio was significantly higher in ward 2 (ER = 1.34,  $p < .01$ ) compared to other wards (Table 1).

**TABLE 1. Characteristics of the nurse managers and nursing staff (SD = standard deviation)**

		Ward 1	Ward 2	Ward 3	Ward 4	Ward 5	Ward 6	Kruskal-Wallis p-value
<b>Nurse manager</b>								
LEAD style score	Selling	8	10	3	3	4	5	
	Telling	0	0	1	3	2	3	
	Participating	4	2	8	0	4	4	
	Delegating	0	0	0	6	2	0	
LEAD flexibility score		2	2	3	3	4	3	
LEAD effectiveness score		12	15	5	-3	6	-2	
<b>Nursing staff</b>								
	<b>N</b>	140	91	128	136	94	110	
	Returned questionnaires (%)	119 (77%)	73 (80%)	98 (77%)	114 (84%)	77 (82%)	89 (81%)	
	Mean (SD) age in years	43.4 (9.3)	42.1 (9.0)	41.0 (10.2)	41.6 (8.6)	41.8 (7.8)	38.9 (8.9)	p = .14
	Mean (SD) years employed	13.2 (8.4)	16.8 (7.7)	13.5 (7.7)	13.1 (7.8)	13.6 (8.3)	13.2 (8.4)	p = .02
	Mean (SD) hours worked	2298 (829)	1911 (680)	2272 (777)	1936 (760)	2122 (616)	2415 (664)	p < .01
	General health	80.1 (16.2)	82.2 (16.3)	84.4 (13.2)	76.7 (13.9)	77.1 (15.1)	80.6 (13.4)	p = .06
	Mental health	87.5 (9.7)	83.2 (14.8)	88.4 (9.9)	88.3 (10.2)	83.7 (13.4)	86.0 (10.5)	p = .33
	Effort/reward ratio	0.96 (0.25)	1.34 (0.60)	1.07 (0.24)	1.08 (0.26)	1.06 (0.27)	0.94 (0.30)	p < .01
<b>Nursing staff sickness absence</b>								
	Mean (SD) number of days	59.4 (100.5)	50.9 (100.8)	66.7 (114.7)	89.6 (121.5)	36.4 (40.1)	68.3 (145.0)	p = .09
	Mean (SD) number of short episodes	2.4 (2.0)	2.6 (2.5)	2.4 (2.9)	4.1 (4.4)	3.6 (2.2)	4.0 (2.6)	p < .01
	Mean (SD) number of long episodes	0.8 (1.0)	0.6 (1.5)	1.0 (1.5)	1.1 (1.4)	0.9 (1.1)	0.9 (1.0)	p = .69

The number of days of sickness absence and long episodes of sickness absence did not differ between the wards as is shown in Table 1. Two wards (ward 4 and 6) had significantly more short episodes of sickness absence between January 2006 and December 2008 than the other wards.

Leadership flexibility was neither associated with the number of days of sickness absence, nor with the number of episodes of sickness absence (Table 2).

**TABLE 2. The association between nurse manager's leadership flexibility and sickness absence among the nursing staff**

		Sickness absence days <sup>a</sup>	Days of sickness absence <sup>b</sup>	
		OR (95% CI) <sup>c</sup>	Short (1-7 days)	Long (>7 days)
		OR (95% CI) <sup>c</sup>	OR (95% CI) <sup>c</sup>	OR (95% CI) <sup>c</sup>
<b>Crude model</b>				
<b>Flexibility</b>				
	Score = 2	0.84 (0.39 - 1.82)	0.79 (0.49 - 1.29)	1.09 (0.59 - 2.04)
	Score = 3	0.96 (0.36 - 1.99)	0.86 (0.54 - 1.36)	1.03 (0.57 - 1.88)
	Score = 4	1	1	1
<b>Adjusted for demographic variables</b>				
	Score = 2	0.80 (0.37 - 1.76)	0.72 (0.44 - 1.20)	1.14 (0.62 - 2.10)
	Score = 3	1.11 (0.53 - 2.35)	0.86 (0.54 - 1.38)	1.12 (0.60 - 2.11)
	Score = 4	1	1	1
<b>Adjusted for demographic variables, health and working conditions</b>				
	Score = 2	0.76 (0.31 - 1.83)	0.60 (0.31 - 1.04)	0.79 (0.44 - 1.41)
	Score = 3	1.16 (0.43 - 2.38)	0.95 (0.39 - 1.81)	1.08 (0.42 - 2.81)
	Score = 4	1	1	1

<sup>a</sup> Ordinal regression analysis<sup>b</sup> Poisson regression analysis<sup>c</sup> OR = odds ratio and CI = confidence interval

Leadership effectiveness was inversely related to the number of days of sickness absence (OR = 0.54) and the number of short episodes of sickness absence (OR = 0.63) as is shown in the crude model of Table 3. The pseudo  $R^2$  values were 0.122 and 0.139 respectively, indicating that the crude model predicted 12% of the variance in days of sickness absence and 14% of the variance in short episodes of sickness absence. Leadership effectiveness was not associated with the number of long episodes of sickness absence.

Adjustment for the demographic variables did not affect the association between leadership effectiveness and sickness absence (Table 3). Adjustment for staff health and working conditions strengthened the association between leadership effectiveness and both days of sickness absence and short sickness absence, which is reflected by the lower odds ratios of the adjusted models compared to the crude regression model.

**TABLE 3. The association between nurse manager's leadership effectiveness and sickness absence among the nursing staff**

		Sickness absence days <sup>a</sup>	Days of sickness absence <sup>b</sup>	
		OR (95% CI) <sup>c</sup>	OR (95% CI) <sup>c</sup>	OR (95% CI) <sup>c</sup>
<b>Crude model</b>				
<b>Effectiveness</b>				
	Low	1	1	1
	Moderate	0.69 (0.43 - 1.08)	0.74 (0.54 - 0.95)*	0.91 (0.66 - 1.28)
	High	0.54 (0.36 - 0.82)**	0.63 (0.48 - 0.82)**	0.78 (0.54 - 1.12)
<b>Adjusted for demographic variables</b>				
	Low	1	1	1
	Moderate	0.55 (0.33 - 0.90)*	0.64 (0.46 - 0.87)**	0.91 (0.64 - 1.30)
	High	0.48 (0.30 - 0.76)**	0.63 (0.47 - 0.84)**	0.70 (0.47 - 1.04)
<b>Adjusted for demographic variables, health and working conditions</b>				
	Low	1	1	1
	Moderate	0.47 (0.26 - 0.84)*	0.65 (0.47 - 0.94)*	0.87 (0.55 - 1.36)
	High	0.36 (0.20 - 0.63)**	0.51 (0.35 - 0.74)**	0.68 (0.42 - 1.08)

a Ordinal regression analysis

b Poisson regression analysis

c OR = odds ratio and CI = confidence interval

\*  $p < .05$  and \*\*  $p < .01$

## DISCUSSION

Leadership flexibility was not associated with sickness absence, whereas leadership effectiveness was related to the number of both days and short episodes of sickness absence. These findings confirmed our hypothesis that sickness absence is lower in nursing teams led by effective managers than in teams of ineffective nurse managers. The results are in line with the findings of Nyberg et al. [33], who reported that inspirational leadership was associated with fewer short episodes (less than one week) of sickness absence for both men and women in the Swedish workforce. The fact that effective managers have less short-term, but not long-term sickness absence in their nursing teams indicates that leadership behavior particularly affects short-term sickness absence. Short-term sickness absence was reported to be related to personal well-being and individual factors [34,35] and is regarded as a type of voluntary absenteeism in the sense that employees decide whether or not to report sick based on their appraisal of illness and work ability [36,37].

A systematic review and meta-analysis by Kuoppala et al. [38] showed that leadership practices were related to sickness absence in general working populations. Bouwmans & Landeweerd [13] reported that democratic leadership contributed positively to the job satisfaction and meaningfulness of work among 561 nurses working in 16 general hospitals in The Netherlands. Autocratic leadership had adverse health effects and resulted in absenteeism. In the literature, we did not find studies associating leadership effectiveness with sickness absence in the nursing workforce.

From the perspective of situational leadership, nurse managers are effective when they appropriately adjust their leadership style to the readiness level of nurses or nursing teams. Appropriate adjustment behavior may increase nurses' self-efficacy and nursing team-efficacy. Nielsen et al. [4] showed that self-efficacy fully mediated the relationship between leadership – satisfaction – wellbeing of employees working in healthcare. Team-efficacy partially mediated the relationship between leadership and job satisfaction and fully mediated the relationship between leadership and wellbeing. High satisfaction and wellbeing may explain our finding that sickness absence is lower in the nursing teams of effective managers. Self-efficacy and team-efficacy have also been reported to improve physical and psychological health outcomes [39].

An alternative explanation for the relationship between nurse managers' effectiveness and short-term sickness absence in nursing teams may be sought in the nursing environment. Obviously, nurse managers have to have a certain self-awareness and social awareness, i.e. emotional intelligence [40], to effectively adjust their leadership styles to the readiness level of individual nurses or nursing teams. Moreover, effective nurse managers will be perceived as genuine, trustworthy, reliable, believable and compassionate, which are attributes of authentic leadership [3,17]. Emotionally intelligent authentic leaders use positive empowerment processes [41] to restore basic confidence, hope, optimism, resiliency and meaningfulness, herewith creating a healthy work environment [42]. A healthy nursing environment joins together with a healthy nursing staff [43]. Possibly, effective nurse managers have less short-term sickness absence in their nursing teams because of a healthier nursing environment.

However, our study showed that leadership effectiveness explained 14% of the variance in short episodes of sickness absence, indicating that other factors are also important with regard to sickness absence in the nursing workforce [44].

## Implications for nursing management

Leadership skills can be developed through specific educational activities, and by modeling and practicing leadership competencies. Nine studies that examined participation in leadership development programs all reported significant positive influences on observed leadership [7]. Within the context of the situational leadership theory, Johnson & D'Argenion [45] showed that it is possible to obtain changes in leadership effectiveness through involvement in leadership training as part of a management development series for nurse managers. Six months post-training a 22% change toward a more effective leadership scores was observed among 11 nurse managers. However, the authors did not report the influence of these changes on employee performance. Our results show that it is leadership effectiveness that matters rather than the flexibility in terms of the range of leadership styles. Effective leadership means choosing the appropriate leadership style for a given situation.

In general, task-oriented leadership is needed when an employee lacks the knowledge and skills to complete a task and a relationship-oriented style is needed to motivate unconfident employees.

Employees lacking the ability and confidence to work, who were called 'disillusioned learners' by Blanchard [46], need a selling leader to arouse their enthusiasm for work. When an employee is losing his or her motivation or confidence to work (called 'the cautious performer'), a supportive participating leadership style is needed. Employees who are willing to work but lack the knowledge or skills to do so (called 'enthusiastic beginners') need a telling leader to give them task-relevant information. Finally, when an employee is both able and confident to complete work tasks (called 'the self-reliant achiever'), the manager can delegate work tasks and keep a low profile. Training nurse managers to effectively appraise these readiness levels may reduce short-term sickness absence among the nursing staff by adjusting their leadership styles to the readiness level of individual nurses and the nursing team.

## Strengths and weaknesses of the study

The strength of our study is that we used employer-recorded sickness absence data instead of employee-reported sickness absence [47] and we had complete sickness absence records for a 3-year period. The use of sickness absence records, which were registered over a longer period, excluded the effects of recall bias [48]. All employees in the study were nurses, and were comparable with regard to working conditions, work environment, and organizational policies. Finally, different sources of information were used, namely the questionnaire for health and working conditions for the nursing staff, the LEAD questionnaire for nurse managers

and the hospital's sickness absence register, to improve the reliability and validity of the findings [49].

The major limitation of the study is its cross-sectional design, precluding opportunities to explore prospective associations and causal relations between leadership and sickness absence. Also, the nurses who were the subjects of the study had been working in the hospital for at least three years and it is possible that they were a selection of nurses who were healthy and enjoyed their work environment.

Furthermore, six managers and nursing wards is a small sample in order to study leadership effectiveness and thus a shortcoming of the study. Therefore, the tentative results of this pilot study should be interpreted carefully. However, the findings are representative in the hospital organization from which managers and staff were recruited, because all its nursing wards were included in the study. We could have included nursing wards of other hospitals, but this was not possible due to differences in sickness absence practices and cultures between organizations [50]. We recommend prospective research in larger healthcare organizations, including more leaders and departments.

Another limitation is that leadership flexibility and effectiveness were based on the information provided by managers on the LEAD-Self questionnaire. It is known that the majority of LEAD-Self instrument respondents consistently score in the high task/high relationship leadership style category [51,52]. This clustering of scores may indicate a form of self-deception of the respondents. However, we did not analyse leadership styles, but calculated leadership flexibility and effectiveness from the LEAD situations.

A final limitation is that leadership effectiveness only explained 12% of the variance in days and 14% of the variance in short episodes of sickness absence. Studies investigating sickness absence often report variances between 10% and 15%, indicating that other than the investigated factors play a role in sickness absence. The low explained variances in our study may be due to the self-rating of managers. The nurses' rating of their manager may have better reflected leadership behavior [53-55] and may have explained more of the variances. However, we failed to find a reliable and valid Dutch version of the LEAD-Other to be completed by nurses. An alternative explanation for the low variance may be the low organizational sickness absence.

The organizational sickness absence represents the number of days of sickness absence of the total hospital staff as percentage of the number of calendar days per year and the number of staff. The hospital's sickness absence was stable at around 3% during the study period. This is low compared to an average organizational sickness absence of 6% in Dutch healthcare. Leadership effectiveness may play a more important role in managing sickness absence when organizational sickness absence is high.

## CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Our results showed that effective nurse managers have lower short-term sickness absence in their nursing teams than ineffective managers. Future longitudinal research including more departments is recommended to reveal the effects of nursing leadership effectiveness on nurses' sickness absence. Such research should also include the number of employees supervised by the manager. This has been found to be a significant moderator of the relationship between nurses' perceptions of their manager's behavior and feelings of workplace empowerment [56]. Efforts are recommended to ensure that managers have a span of control that allows them to know the readiness level of their staff and use the appropriate leadership styles to stimulate optimal professional performance.

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# Leadership effectiveness and staff sickness absence: a controlled before and after study

Submitted

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## ABSTRACT

**Background:** Sickness absence in healthcare affects the efficiency and quality of care. In The Netherlands, supervisors play an important role in managing sickness absence

**Purposes:** To investigate leadership effectiveness in relation to staff sickness absence in a prospective controlled study before and after managerial reorganisation.

**Methodology:** 16 hospital managers completed the Leadership Effectiveness and Adaptability Description questionnaire. Staff (N=1,091) sickness absence was retrieved from hospital records and measured at both a group and an employee level. At the group level, the proportion of employees without sickness absence and the difference in sickness absence days before and after managerial reorganisation were analysed. At the employee level, the Sickness absence duration before managerial reorganisation was compared with the duration afterwards, distinguishing between short-term (1-7 days), medium-term (8-42 days), and long-term (>42 days) sickness absence.

**Findings:** Six wards (N=403) retained the same manager and were clustered into a control group. The six wards (N=504) that obtained a more effective manager were clustered, as were the four wards (N=184) that got a less effective manager than the one before managerial reorganisation. At the group level, the proportion of employees without sickness absence increased (P=0.033) from 38% before to 49% after managerial reorganisation in wards that obtained a more effective manager. At the employee level, the duration of medium-term Sickness absence decreased from a median duration of 22.5 days before managerial reorganisation to 14.0 days after managerial reorganisation (P=0.021) in employees who obtained more effective managers. The duration of long-term Sickness absence decreased in employees who got more effective managers, and increased in employees who got less effective managers, but these changes were not statistically significant, due to the low number of long-term sickness absence episodes.

**Practice implications:** Sickness absence decreased in wards that obtained a more effective manager. Effective managers may be more successful in persuading sick-listed employees to perform adjusted work tasks or transitional duties.

## INTRODUCTION

The current nursing shortages have emphasized the role of managers in rebuilding the nursing workforce and developing high quality nursing environments. Leadership practices of managers influence job satisfaction, performance, productivity, and turnover of healthcare workers [1-3]. Not only job turnover of healthcare workers, but also sickness absence increases nursing shortages. Sickness absence is high in healthcare and adversely affects the efficiency and quality of care [4,5]. Managers have an important role in assessing the characteristics of absenteeism and effectuating an organisation's sickness absence policies [6,7]. Early intervention is key and the sooner managers take action, the better the chances are of an employee making a full and speedy return to work. In a well-managed workplace, work may be a treatment for people recovering from sickness absence and an early return to work expedites both mental and physical recovery [8]. Adjustments in work tasks and times or transient duties enable employees to return to work safely before their symptoms completely disappear.

## CONCEPTUAL FRAMEWORK

### Leadership theories

The most common definition of leadership includes four elements: leadership is 1) a process that 2) entails influence, 3) occurs within a group, setting or context and 4) involves achieving goals that reflect a common vision [9]. Early leadership theories focused on traits and behaviours that distinguish leaders from followers. Later theories considered leaders' skills and identified two basic leadership styles: the task-oriented autocratic leader and the relationship-oriented democratic leader. Task-oriented leaders focus on tasks to be accomplished, whereas relationship-oriented leaders invest in relationships to achieve a common goal. Nowadays, theories on transformational leadership predominate in nursing research, probably because of their emphasis on relationships as the foundation for effectuating positive nursing outcomes [3]. Relationship- or people-focused leadership practices contribute to a better nursing environment, higher productivity, and more effective healthcare organizations, while task-oriented transactional or instrumental approaches are associated with negative nursing outcomes, such as absenteeism [3,10].

## Leadership and sickness absence

In a review of the literature, Luz & Green [11] found that the quality of leadership and organizational behavior were amongst the factors most often associated with sickness absence. Later, Kuoppala et al. [12] showed that supportive leadership was associated with lower sickness absence. In the Swedish workforce, supportive leadership was associated with fewer short (< 1 week) episodes of sickness absence in both men and women, whereas autocratic leadership was related to a higher number of sick days taken [13].

In healthcare, Bouwmans & Landeweerd [14] reported that democratic leadership contributed positively to the job satisfaction and meaningfulness of work among 561 nurses from 16 general hospitals in the Netherlands. Autocratic leadership had adverse health effects and resulted in absenteeism. Recently, it was reported that nursing teams led by managers with relationship-oriented leadership styles had fewer short episodes of sickness absence than nursing teams of managers with task-oriented styles [15].

## Leadership effectiveness and sickness absence

The situational leadership theory [16] provides a practical framework for the interaction between managers and employees, particularly suited for work disability [15,17,18]. The theory of situational leadership assumes that no single leadership style is appropriate for all situations. Managers should adapt their leadership style appropriately to the specific needs of employees and situations [19].

The needs of sick-listed employees depend on their competence and commitment. The situational leadership theory assumes four maturity or readiness levels; employees may be:

- Enthusiastic beginners, who are low on competence and high on commitment;
- Disillusioned learners with increasing competence but low on commitment;
- Cautious contributors with moderate to high competence and variable commitment;
- Self-reliant achievers who are high on both competence and commitment.

Leadership effectiveness is defined as using the leadership style that best suits the readiness level of the employee [20]. Enthusiastic beginners need a task-oriented directing manager, who gives detailed rules and instructions and tells them how, when, and where to perform tasks. Disillusioned learners need a task- and relationship-oriented coaching manager who still provides a great deal of direction but also attempts to hear the employees' feelings as well as their ideas and suggestions. Cautious performers need a relationship-oriented supporting manager, who provides understanding and facilitates problem-solving decision-making on the employees' part. Self-reliant achievers need a delegating manager letting the

employees 'run their own show'. The manager delegates as the employees are both able and willing to take responsibility for decisions and implementation [17,21].

Recently, it was reported that high leadership effectiveness was associated with fewer days and fewer short episodes of sickness absence [18]. It was concluded that effective nurse managers had less short-term sickness absence in their nursing teams. However, this was a cross-sectional pilot study including six nursing wards. The current study replicated this research in a larger and more heterogeneous study population using a prospective, controlled before – after design. Based on this study of Schreuder et al. [18], we hypothesized that sickness absence would decrease in wards that get a more effective manager and increase in wards that get a less effective manager.

## METHODS

### Study setting and design

The study population was enlisted from a hospital in the Dutch province Friesland staffing a total of 1,232 employees. All employees who worked in one of 16 hospital wards headed by a manager were eligible for this study. In summer 2009, the hospital implemented a managerial reorganisation to reduce the span-of-control of managers by reducing staff rates. This before – after study investigated the effectiveness of new ward managers relative to their predecessors. Staff sickness absence 1 year before and 1 year after managerial reorganisation was compared at group level and at the individual level.

### Ethical considerations

The sickness absence data before and after managerial reorganisation were gathered at the employee level and subsequently anonymised by the Human Resources department of the hospital. According to the Dutch Medical Research involving Human Subjects Act, ethical approval is not required for analysing anonymous register data. The ward managers gave informed consent to the use of their questionnaire data for scientific research.

### Leadership effectiveness

We defined leadership effectiveness according to the situational leadership theory as the ability to adjust leadership practices and styles appropriately to the readiness level of employees. In summer 2009, all ward managers completed the Dutch version of the Leadership Effectiveness and Adaptability Description (LEAD) questionnaire [16], which was proven reliable and valid in leadership research [22] and

has been used earlier to investigate nurse manager leadership practices [23]. The LEAD-Self assesses a leader's effectiveness by 12 management situational questions, for example 'You are considering a change. Your team has a fine record of accomplishment. The team respects the need for change'. All situations have four possible responses, in the example: A) Allow group involvement in developing the change, but not be too directive, B) Announce the change and then implement with close supervision, C) Allow the group to formulate its own direction, and D) Incorporate group recommendations, but direct the change yourself. The response can be converted into an effectiveness score according to the appropriateness of the response in the given situation [20]. In the example, response C scores +2, response A +1, response D -1, and response B -2, because the latter represents the most inappropriate behavior in the given management situation. The highest possible total effectiveness score for the 12 management situational questions is +24 and the lowest score would be -24. A positive score represents an effective leader and a negative score an ineffective leader [20]. The 12-item validities for the effectiveness score ranged from 0.11 to 0.52 and 10 of the 12 coefficients were higher than 0.25. Eleven coefficients were significant at the 1% level and one coefficient at the 5% level. Across a six-week interval, the correlation between effectiveness scores was 0.69 [24].

## Sickness absence

Sickness absence was defined as absence from work due to work-related and non work-related injuries and illnesses. Sickness absence was registered by the personnel administration of the hospital. The calendar days between the first and last day of sickness absence were counted as sickness absence days and adjusted for partial return to work. For example, if a sick-listed employee was working half of his/her normal working hours for 8 days then this was counted as a total of 4 sickness absence days. The study distinguished between short-term (1-7 days), medium-term (8-42 days), and long-term (>42 days) sickness absence. Short-term sickness absence is merely based on behavioural determinants and has been reported to be voluntary in the sense that employees may weigh the pros and cons of reporting sick [25]. Short-term sickness absence has been regarded as a coping style to withdraw from work-related problems [26], or to maintain work capacity in a demanding work environment [27]. We assume that medium-term sickness absence is determined by both behavioural and medical factors, whereas medical impairments and limitations predominate in long-term sickness absence. The duration of medium-term sickness absence was defined according to the Dutch sickness absence compensation policies, which necessitate a medical certification of illness by an occupational physician within 42 days of reporting sick.

## Statistical analysis

We considered a multilevel analysis, but found that the variance in the duration of sickness absence on the employee level by far exceeded the variance on the ward level. A paired analysis for each ward would require too much tests, implying the risk of finding a significant result purely by chance. Therefore, the 16 wards were clustered into a group of wards that obtained a more effective manager after managerial reorganisation, a group of wards that retained the same manager after managerial reorganisation, and a group of wards that obtained a less effective manager after managerial reorganisation in summer 2009. At the group level, the proportions of employees without sickness absence before and after managerial reorganization, were compared by using McNemar's test for paired proportions. The difference in the total number of sickness absence days (i.e., sickness absence days after managerial reorganisation minus sickness absence days before managerial reorganisation) was analysed by using the non-parametric Kruskal-Wallis test comparing the three groups of wards.

On the employee level, the duration of sickness absence before managerial reorganisation was compared with the duration of sickness absence after managerial reorganisation by using the non-parametric Wilcoxon's signed ranks test for paired samples in each group of wards. An asset of paired statistical testing is the exclusion of the inter-individual variance in sickness absence. A disadvantage is that only the results of employees who worked in a ward during the whole study period from summer 2008 (i.e. one year before managerial reorganisation) until summer 2010 (i.e. one year after managerial reorganisation) were eligible for analysis.

All statistical analyses were performed in SPSS for Windows version 16. The level of significance was set at 5%.

## RESULTS

After managerial reorganisation in summer 2009, six wards staffing a total of 403 employees retained the same manager and the other ten wards obtained a new manager. Six wards staffing a total of 504 employees obtained managers who were more effective than their predecessors according to the LEAD scores, and four wards with a total of 184 employees got a less effective manager than the manager before managerial reorganisation (Table 1).

**TABLE 1. Hospital wards before and after managerial reorganisation**

The table shows staffing and manager's characteristics (age, gender, effectiveness score) before and after managerial reorganisation (MR) in summer 2009. In the process of managerial reorganisation, ward 1/2, ward 3/4/5, ward 6/7, ward 8/9 were split into separate wards.

	Before MR		After MR	
	Staff	Management Effectiveness	Staff	Management Effectiveness
Ward 1	140	12	50	14
Ward 2			89	*
Ward 3			84	*
Ward 4	163	15	44	11
Ward 5			35	11
Ward 6	128	5	75	18
Ward 7			68	3
Ward 8	136	-3	106	8
Ward 9			52	8
Ward 10	82	3	106	*
Ward 11	40	9	34	*
Ward 12	63	12	65	*
Ward 13	26	4	25	*
Ward 14	30	15	37	8
Ward 15	94	6	108	12
Ward 16	110	-2	113	14
<b>Total</b>	<b>1,012</b>		<b>1,091</b>	

\* same manager as before summer 2009

In the year before managerial reorganisation, a total of 1,012 employees worked in the 16 wards. The number of employees increased to 1,091 in the year after managerial reorganisation. The sickness absence data of 996 employees who worked in the wards during the whole study period from summer 2008 to summer 2010 were

eligible for paired analyses. Table 2 shows the numbers of sickness absence days before and after managerial reorganisation for each ward.

**TABLE 2. Sickness absences before and after managerial reorganization**

The table shows the mean (standard deviation) number of sickness absence days on ward level for wards that obtained a more effective manager ( $\wedge$ ), retained the same manager (=), or obtained a less effective manager ( $\vee$ ) after managerial reorganisation (MR) in summer 2009.

	Manager effectiveness	Mean (SD <sup>a</sup> ) days 1 year before MR	Mean (SD <sup>a</sup> ) days 1 year after MR
ward 1	$\wedge$	29.0 (65.2)	22.4 (53.3)
ward 6	$\wedge$	15.4 (31.8)	16.3 (37.5)
ward 8	$\wedge$	20.4 (51.7)	17.8 (45.2)
ward 9	$\wedge$	20.1 (59.3)	14.7 (25.7)
ward 16	$\wedge$	24.4 (56.0)	20.7 (52.4)
ward 15	$\wedge$	40.2 (15.4)	30.4 (12.6)
<b>Group total</b>		21.9 (53.6)	20.7 (49.9)
ward 2	=	22.7 (52.3)	20.1 (52.3)
ward 12	=	12.7 (30.9)	14.9 (38.6)
ward 10	=	16.5 (36.5)	17.7 (38.5)
ward 13	=	14.1 (30.5)	16.3 (33.9)
ward 11	=	9.1 (14.0)	9.7 (14.8)
ward 3	=	18.5 (54.5)	17.5 (55.8)
<b>Group total</b>		16.2 (40.7)	16.9 (38.8)
ward 4	$\vee$	5.8 (10.6)	22.9 (11.5)
ward 7	$\vee$	7.0 (15.9)	9.1 (17.7)
ward 14	$\vee$	29.0 (83.7)	27.2 (63.9)
ward 5	$\vee$	33.0 (62.5)	44.7 (88.4)
<b>Group total</b>		13.0 (39.9)	14.9 (39.0)

<sup>a</sup>SD = standard deviation

The proportion of employees without sickness absence increased from 38% before managerial reorganisation to 49% after managerial reorganisation ( $P = 0.033$ ) in the group of wards that obtained a more effective manager in summer 2009. The proportion of employees without sickness absence increased from 41% to 44% ( $P = 0.284$ ) in the group of control wards that retained the same manager, and virtually remained the same (44% before MR and 45% afterwards with  $P=0.671$ ) in the group of wards that got a less effective manager. The change in the number of SA days did not differ significantly across the three groups of wards (Table 3).

**TABLE 3. Sickness absence days at the group level before and after managerial reorganisation**

The table shows the mean difference of the number of sickness absence days after managerial reorganisation (MR) minus the number of sickness absence days before MR, distinguishing between days of short-term (1-7 days), medium-term (8-42 days), and long-term (>42 days) absence.

	Mean (SD <sup>a</sup> ) difference in SA days	Kruskal-Wallis (P-value)
<b>Short-term SA</b>		P = 0.804
<b>More effective manager</b>	-0.2 (5.8)	
<b>Control (same manager)</b>	-0.0 (5.3)	
<b>Less effective manager</b>	-0.0 (5.2)	
<b>Medium-term SA</b>		P = 0.237
<b>More effective manager</b>	-1.0 (13.0)	
<b>Control (same manager)</b>	-0.3 (10.3)	
<b>Less effective manager</b>	0.9 (10.0)	
<b>Long-term SA</b>		P = 0.871
<b>More effective manager</b>	-2.2 (57.0)	
<b>Control (same manager)</b>	-1.0 (32.0)	
<b>Less effective manager</b>	6.1 (60.2)	

<sup>a</sup>SD = standard deviation

On the employee level, the duration of sickness absence before and after managerial reorganisation did not differ significantly in employees who retained the same manager (Table 4). In employees who obtained a more effective manager, the duration of medium-term sickness absence decreased significantly ( $P = 0.021$ ) from median 22.5 days before managerial reorganisation to median 14.0 days after managerial reorganisation. Long-term sickness absence was also shorter after MR (median 77.0 days) than before managerial reorganisation (median 86.5 days), but the difference was not significant (Table 4). In employees who got a less effective manager, the duration of long-term sickness absence increased non-significantly from median 70.5 days before managerial reorganisation to median 86.0 days.

**TABLE 4. Sickness absences at the employee level before and after managerial reorganisation**

The table shows the duration of sickness absence before and after managerial reorganisation (MR), distinguishing between short-term (1-7 days), medium-term (8-42 days), and long-term (>42 days) absence and the results of non-parametric Wilcoxon's signed ranks analysis for paired samples.

Manager		N	Median (IQR <sup>a</sup> ) days 1 year before MR	Median (IQR <sup>a</sup> ) days 1 year after MR	Wilcoxon's signed ranks (P-value)
More effective	short	237	4.0 (2.0 – 7.0)	2.0 (0.0 – 5.0)	P = 0.892
	medium	47	22.5 (15.5 – 31.5)	14.0 (10.0 – 22.0)	P = 0.021
	long	27	86.5 (52.5 – 164.0)	77.0 (49.0 – 144.5)	P = 0.083
Control	short	182	3.0 (0.0 – 6.0)	5.0 (0.0 – 6.0)	P = 0.335
	medium	36	12.5 (9.0 – 25.0)	13.0 (9.5 – 24.5)	P = 0.859
	long	20	66.0 (20.5 – 155.0)	68.0 (26.0 – 118.5)	P = 0.570
Less effective	short	81	1.0 (0.0 – 4.0)	4.0 (2.0 – 7.0)	P = 0.850
	medium	13	17.0 (10.0 – 21.0)	19.5 (12.0 – 27.0)	P = 0.786
	long	9	70.5 (53.5 – 163.0)	86.0 (62.0 – 212.0)	P = 0.606

<sup>a</sup> IQR = interquartile range (i.e., 25<sup>th</sup> percentile – 75<sup>th</sup> percentile)

## PRACTICE IMPLICATIONS

This study investigated sickness absence before and after managerial reorganisation. At the group level, the proportion of employees without sickness absence increased significantly in wards that obtained a more effective manager, whereas the number of sickness absence days did not change significantly. At the individual level, medium-term sickness absence was of shorter duration when employees got a more effective manager. The duration of long-term sickness absence was shorter in employees who obtained a more effective manager and longer in employees who got a less effective manager, but the changes were not significant. Hence, the results partly supported our hypothesis that sickness absence would decrease in wards that got a more effective manager. Sickness absence did not increase significantly in wards that obtained a less effective manager.

### Leadership and short-term sickness absence

In the current study, the duration of short-term sickness absence was not associated with leadership effectiveness. Earlier, Schreuder et al. [18] reported that effective leadership was associated with fewer sickness absence days. Regarding the present results, the lower number of sickness absence days is not due to a shorter duration of short sickness absence episodes. Short-term sickness absence lasts no more than

one week and managers may not consider several sickness absence days a serious problem. Short sickness absence episodes, however, may be problematic when they occur frequently and interfere with the staffing of nursing teams. The numbers of sickness absence episodes were not analysed in the current study, because we adjusted sickness absence for partial return to work and it is both unusual and impractical to adjust sickness absence episodes for partial return to work. However, the increased proportion of employees without sickness absence in the group of wards that got a more effective manager in summer 2009 may indicate that fewer employees took short-term sickness absence, which is in line with the earlier findings of Schreuder et al. [18].

### Leadership and medium-term sickness absence

In medium-term sickness absence, behavioural coping aspects [25-27] may play a role, as well as medical impairments. The readiness concept of the situational leadership theory incorporates behavioural aspects in terms of commitment (i.e., confidence and motivation to accomplish a task) and impairments in terms of loss of competences (i.e., skills and knowledge to accomplish a task). According to the situational leadership theory, managers are effective when they adjust their leadership style appropriately to the readiness level of employees or teams [20]. This study showed that the duration of medium-term sickness absence was shorter in employees who obtained more effective managers. Managers who appropriately appraise the readiness level employees and adjust their leadership practices accordingly may be more successful in persuading a sick-listed employee to perform adjusted work tasks or transitional duties, herewith reducing the duration of medium-term sickness absence.

### Leadership and long-term sickness absence

We assumed that long-term sickness absence is due to serious illness with medical impairments and limitations [26]. The results of this study showed that long-term sickness absence was of shorter duration when employees obtained a more effective managers and lasted longer when employees got a less effective manager. Thus, managers who effectively engage sick-listed employees in work may facilitate return to work and herewith reduce the duration of long-term sickness absence. However, the differences in duration of long-term sickness absence before and after managerial reorganisation were not significant, probably due to the low number of employees with long-term sickness absence.

## Strengths and limitations of the study

The strength of our study is that we used recorded sickness absence, the duration of which is less likely to be recall-biased than self-reported sickness absence [28]. Furthermore, the paper presents findings from a prospective study investigating a larger sample than previous work in the field [18]. Although the study had a control group of wards that retained the same manager, the study design was non-randomised, which means that the results must be interpreted with caution, because the findings may be biased by confounding. For example, the group of wards that got a less effective manager had lower sickness absence (mean 13.03 days) and a higher proportion (44%) of employees without sickness absence before managerial reorganisation than the group of wards that got a more effective manager (21.93 days and 38% respectively). It is possible that more effective managers were selected for wards where sickness absence was a greater problem. As high sickness absence is more easily reduced than low sickness absence, this may have overestimated the effects of leadership practices on sickness absence. Alternatively, if wards got a less effective manager after managerial reorganisation, then they were led by more effective managers before managerial reorganisation. Hence, the fact that sickness absence was lower before managerial reorganisation in wards that obtained less effective managers in the managerial reorganisation process confirmed the finding that effective managers have lower sickness absence in their wards.

The situational theory of leadership is being criticised for its rather simplistic approach, while leadership is more and more viewed as a complex construct in which leaders' and followers' personal characteristics and expectations play important roles. However, the readiness concept of the situational leadership theory is particularly suitable to situations of sickness absence and work disability [17]. The appraisal of the readiness level of a sick-listed employee may help managers in deciding how to manage sickness absence at the individual level. A weakness of the study was that we assumed leadership effectiveness to be constant over time. Although leadership effectiveness was found to be fairly constant [24], manager effectiveness may have evolved during the study period. Furthermore, leadership styles were based on information provided by the managers themselves. It has been reported that asking employees to rate their leaders by using the LEAD-Other questionnaire is a better measure of leadership practices [29]. However, a validated Dutch version of the LEAD-Other questionnaire was not available.

It is known that the vast majority of LEAD-Self instrument respondents consistently score high task/high relationship leadership behaviour [29,30]. This clustering may indicate that respondents "knew" the preferred responses. However, we did not analyse leadership styles, but calculated leadership effectiveness from the LEAD scores and it is less obvious for responders how leadership effectiveness was calculated. Hence, bias by preferred answering will be lower as compared to the bias in reporting leadership styles.

Another limitation of the study was that not only the managers changed during managerial reorganisation, but also the structure of some wards in the hospital. For example, Ward 1/Ward 2, Ward 3/Ward 4/Ward 5, Ward 6/Ward 7 and Ward 8/Ward 9 were split into separate wards, which reduced staff rates by up to 49%. This may have influenced the results when we hypothesize that managers of smaller wards know the staff and their readiness levels better and than those of large wards. However, Ward 3 and Ward 2 retained the same sickness absence levels and Ward 4, Ward 7, and Ward 5 had higher sickness absence levels after managerial reorganisation despite the lower staffing rates. Hence, it was unlikely that the results were biased by lower staffing rates.

## CONCLUDING REMARKS

Rising healthcare costs and concerns about recruiting and retaining healthcare workers demand leadership training and competency development of managers in healthcare. Most nurse managers have learnt on the job with trial and error and without formal leadership education [31,32]. Sherman et al. [33] concluded that there is a need to formally develop and mentor next generation nurse managers, especially in financing and budgeting, communication skills, leadership behaviours, and effectiveness. Interpersonal effectiveness, which is the ability to communicate, listen, and facilitate, was felt to be a key competency for managerial success [34]. The theory of situational leadership may support the development of this competency by training managers in appraising an employee's readiness level. The results of the current study show that leaders, who effectively adjust their leadership styles to the employee's readiness level, may reduce the duration of sickness absence. Future randomised-controlled trials are required to investigate the effects of training manager effectiveness on staff sickness absence.

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# Characteristics of zero-absenteeism

Submitted

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## ABSTRACT

**Background:** Literature on sickness presenteeism is emerging, but still little is known about employees who are never absent from work due to illness. Insight in the determinants and characteristics of zero-absenteeism may provide clues for reducing sickness absence levels. This study investigated the characteristics of zero-absentees.

**Method:** A qualitative study comprising 16 semi-structured interviews and 2 focus groups (N=8 and N=7) with zero-absentees working in hospital care. Zero-absenteeism was defined as no sickness absence in the last 5 years. Azjen and Fishbein's model of planned behaviour was used as a framework for the interviews and focus groups.

**Results:** Zero-absentees perceived good health and reported no sickness presenteeism. They have strong personal norms and beliefs about work presence.

**Conclusion:** Supervisors should realize that zero-absentees represent the healthy part of a team and are driven by intrinsic motivation rather than social pressure.

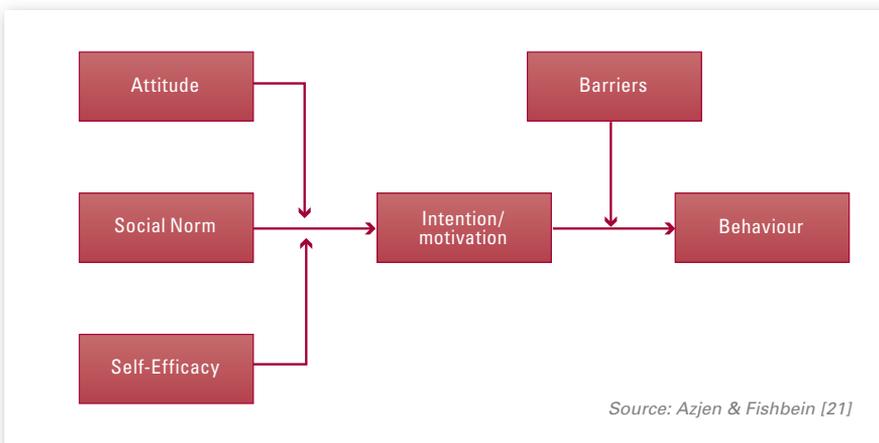
## INTRODUCTION

There is a large body of knowledge on determinants of sickness absence, while research on work attendance and its determinants is beginning to get more attention in the literature. Lindberg et al. [1,2] investigated determinants of work ability and found that promoting excellent work ability depended on physical factors, clear work tasks, and positive feedback, while prevention of poor work ability seemed to depend on job security and psychosocial factors. Engström & Janson [3] found predictors of work attendance in the personal background as well as in work related variables. Dellve et al. [4] reported that work-health promoting (WHP) strategies and leaders' attitudes towards healthy working affected work attendance of employees. WHP interventions had the largest effect on work attendance.

Theories of work attendance vary according to their use, cultural context and focus [4]. Work attendance has been conceptualized as a consequence of individual choices or work exposures that may be affected by individual, social, organizational and societal influences. Work attendance is usually defined as not being sickness absent in a period of one year. In a Swedish study, one-third of 3275 human service workers were work attendee's in the sense that they took no sick leave at all over one year. The highest prevalence of work attendance was found among workers in the care for disabled patients and among male workers. The lowest prevalence was found among workers in the care for the elderly [4]. In the Netherlands, the one-year work attendance rate was 37.4% in healthcare and 38.2% in hospital care [5]. However, Dellve et al. [6] showed that 1-year work attendance, which is often used as a measure in organizations, is an imprecise measure that does not discriminate between the healthier kind and the unhealthy kind of work attendance.

Work attendance is often associated with sickness presenteeism, a situation in which employees go to work when ill and afterwards judge they had better stayed at home. The model of sickness presenteeism, developed from more traditional occupational health psychology research, describes how exposures at work influence the individuals' sickness attendance [7]. The model shows that given a certain level of health, there are various factors that increase or decrease the risk of sickness presenteeism and impact on the choice of sickness absence. Aronsson and Gustafsson divide factors promoting sickness presenteeism in work-related demands and personally related demands for work presence. Work related demands consist of replaceability ("work left undone"), resources for good performance of work tasks, conflicting demands, control (i.e. influence over the pace of work and work pressure), and working overtime. Personally related demands for work presence consist of individual boundarylessness (difficulties in saying "no") and private financial variables. Sickness presenteeism is associated with future sickness absence [8]. From a work disability prevention perspective it is important to keep individuals out of sickness absence, for example by WHP-strategies [9].

Antonovsky's salutogenic approach focuses on people's resources and capacities to create and keep good health despite health risks and disease [10,11]. The salutogenic approach refines and integrates the theories of self-efficacy [12], learned resourcefulness [13], and acquisition of coping skills [14] into a construct called 'sense of coherence', which is a combination of people's ability to assess and understand the situation they are in, the meaningfulness to move in a health promoting direction, and the capacity to do so [15,16]. The sense of coherence has been reported in several studies to affect sickness absence [3,17-20]. Self-efficacy itself is defined as one's belief in one's ability to succeed in specific situations. People with high self-efficacy are more likely to view difficult tasks as something to be mastered rather than something to be avoided [12]. Self-efficacy is an important construct in Azjen and Fishbein's [21] theory of planned behaviour (Figure 1).



**FIGURE 1. Model of planned behaviour**

This generally accepted theory links attitudes, social influence, and self-efficacy to one's intention to change and the observed behaviour. The theory states that intended behaviour may not be expressed in actual behaviour because of barriers, which are unexpected elements outside a person's influence. The theory of planned behaviour is sometimes used in an occupational health context [22]. For example, to explain intentions to call in sick or motivations to stay at work when ill. Insight in the characteristics of zero-absenteeism may provide new ways of strengthening conditions that support sustainable health and workability.

## METHODOLOGY

### Design and population

The study was conducted in a regional hospital in Drachten (the Netherlands) staffing a total of 1053 employees. From these employees, those who worked in the hospital for  $\geq 5$  years and had no sickness absence in the last 5-years, were selected for this qualitative study. A total of 47 employees (43 women and 4 men) fulfilled these inclusion criteria and were regarded as zero-absentees. These employees received a letter in which the procedure and the goal of the study were explained. Subsequently, they were contacted by telephone to ask for participation. Of 47 zero-absentees, 31 agreed to participate in our study (30 women and 1 man) and were listed randomly. From this random list, the people with odd numbers were invited for the interviews. The interviews were performed until saturation occurred. The remaining participants were invited for the focus groups. The interviews and focus groups were performed by the same and independent moderator. Zero-absentees were allowed to overview their whole work life. Hence, answers were not restricted to the 5 years that they were zero-absentee.

### Interviews

First, semi-structured interviews were performed to provide insight in the factors that characterized zero-absentees. A topic guide was used as a prompt for questioning. The key question was: What makes you a zero-absentee? The direction in the interviews was guided by the participants' answers to this key question and their individual experiences. After 16 individual interviews, saturation was reached i.e. no new information or insights occurred from the interviews. The interviews took place on an independent location in the hospital and lasted approximately 50 (range 40-65) minutes.

### Focus groups

A focus group is designed to gather information and share perspectives in a group discussion without the pressure to reach consensus. An important asset of focus groups is that participants interact with each other and yield extra information in doing so. The information gathered with the in-depth interviews was used as input for two focus groups in which 15 employees ( $N=8$  and  $N=7$ ) participated. Participants were presented with a summary of the interview findings and were encouraged to develop or reject the ideas presented to them, which is a method of respondent validation [23,24]. The focus groups then further explored key themes by using the model of planned behaviour as a framework [21]. Both focus groups took place on an independent location in the hospital and lasted 55 and 70 minutes. The group discussions were taped and transcribed verbatim. Key points were marked with a series of codes and the codes were grouped into similar concepts. From these concepts, categories were formed in line with the theory of planned behaviour.

## RESULTS

### Zero-absenteeism and sickness presenteeism

Participants stated that they were never or seldom sick enough to stay off work. Only one of the participants recalled one episode of sickness presenteeism. Going home earlier than planned happened now and then, but all because complaints got too serious to continue working. When attending work despite complaints at the start of a shift, they all judged afterwards that work attendance was possible. When asked what made participants a zero-absentee, aspects such as pleasure in work, good team spirit, personal character, and upbringing were mentioned most frequently.

### Attitudes

Motivations for work attendance despite health complaints were mainly attributed to the team and especially team spirit. Feeling involved in the team, committed to the team, and satisfaction with the contents of work made zero-absentees decide to go to work despite having health complaints.

*...for me team spirit makes the difference, when I would work in a less enthusiastic team I would be less motivated to work...*

*...work is important for me (...) I like what I do and feel satisfied and content with my job and my team...*

Furthermore, rewards, in terms of respect from the team were important rather than respect from patients or supervisors.

*...for me knowing I did a good job is important (...) as long as I am satisfied myself, I know others appreciate my work although they do not tell me all the time...*

Finally, the strict personal norms and values of zero-absentees are worth mentioning as attitudes that affect work attendance.

*...you only call in sick when you are not able to function and you do not take sick leave for your own sake...*

*...if you have work you have to be at work, you cannot take sick leave when your children are sick...*

*...you don't call in sick when you have a night or weekend shift, in that case you look for alternatives to cope with the situation...*

*...nursing care is a physically demanding job (...) it is you're responsibility to stay healthy and prevent medical impairments limiting the performance of work tasks...*

## Subjective norms, normative belief and upbringing

All zero-absentees were of the opinion that parental education was the most important base for their personal norms and beliefs. They often mentioned that their father or both parents were self-employed in work, for example farming or horticulture, in which days off due to illness is rare. Zero-absentees were taught to go to school when they are ill and were told to come home when complaints got worse. This was seen as the basis of zero-absenteeism nowadays.

*...to call in sick is the result of your background in which parents easily called in sick (...) it is actually the example you get...*

Some participants, especially the older ones, added that these norms and beliefs develop over time.

*...In the first part of my career I sometimes thought about calling in sick when I did not feel well (...) I do not do that anymore, your norms develop over the years...*

Differences in norms between older and younger employees were attributed to the importance of work and private life. Young employees combine having children with having a job and were thought to prefer to take sick leave when they have a sick child or other problems at home.

*...taking sick leave because of a sick child is ridiculous. You ought to arrange good daycare (...) you have a responsibility towards your work (...) I hear that younger colleagues think different about it...*

Social norms, in terms of pressure from the supervisor or team members to attend work, were not mentioned spontaneously. When asked, zero-absentees reported that perceived social pressure was not important in their decision to attend work when ill.

## Self-efficacy

Zero-absentees experience a considerable ability to cope with health complaints. Several zero-absentees had chronic medical conditions with impairments, such as recurrent depression, low back pain, and severe allergies or suffered stressful life events. They were confident in coping with these problems and performed preventive activities or acted promptly when symptoms exacerbated. When confronted with stressful life events or serious emotional situations, zero-absentees actively sought support asking for guidance and coaching rather than comfort.

*... I really pay a lot of attention to how I feel (...) when I am depressed I go to a doctor to ask for treatment (...) then I can keep myself in balance and do not need sick leave...*

*...when my dad was terminally ill they gave up my dad I directly started swimming to make sure I stayed in good physical condition (...) I used the credits that I built up in the team to leave my work earlier so I could spend time with my dad.*

Zero-absentees did not only believe in themselves but seemed to believe in general, that good things just happened to them.

### Barriers to attend work

For zero-absentees, barriers to attend work provoked creativity leading them to explore opportunities to attend work.

*...when I had back pain and was not allowed to bend, I told my patients to pick things up themselves or ask my colleague (...) they dropped a lot less.*

This creative seeking for opportunities to attend work appeared to be remarkably stable among zero-absentees. Zero-absentees stayed positive and focused towards work attendance. They acted strong when setbacks appeared and actively explored and enlarged adjustment latitude. They learned from their experiences, which strengthened their motivation to attend their work

## DISCUSSION

The aim of this qualitative study was to explore the characteristics of zero-absenteeism by interviews and focus group discussions based on the concepts of the theory of planned behaviour [21]. The results indicate that personal attitudes and self-efficacy were more important than social norms and pressure to attend work. Furthermore, ideas about health was an important characteristic of zero-absentees, which confirmed the findings in earlier studies that poor health was associated with the frequency of sickness absence [25,26]. Sickness presenteeism was mentioned by only one zero-absentee, but was not followed by sickness absence. The current results also confirmed that esteem rewards, especially respect from team members, are associated with zero-absenteeism [26].

There is a strong association between ill health and sickness absence [27], but the association between good health and work attendance is not as obvious. Individuals may go to work despite feeling ill, a phenomenon called sickness presenteeism. Aronsson & Gustafson [7] showed that over 50% of a random sample of employees in Sweden had sickness presenteeism, particularly employees working in healthcare and education [28]. Possibly, healthcare workers and teachers feel a pressure to attend work because they feel responsible for patients or children. The current results showed that zero-absenteeism differs from sickness presenteeism in that zero-absentees are healthier and rarely report sickness presenteeism. Fur-

thermore, zero-absentees mentioned their team, especially team spirit, rather than pressure from patients as most important factor to attend work. Bergström et al. [8] reported that individuals with frequent sickness presenteeism are at risk of future sickness absence. The present study found that zero-absentees experience themselves as the healthiest part of the workforce. They believe they can prevent health complaints by a healthy lifestyle. Furthermore, zero-absentees acted promptly when health complaints arose or exacerbated. Hence, in contrast to sickness presenteeism, zero-absentees are not likely to report sick, all the more because of their norms and upbringing prevents them from doing so.

Personal beliefs and norms about sickness absence and work-family interference, as well as commitment to both colleagues and organization seem to strengthen zero-absentees in attending work. Norms and beliefs taught by parents were an important aspect of zero-absenteeism. Besides, professional norms of being a healthcare provider were mentioned several times. Though social norms are important in the theory of planned behaviour, the pressure of either team norms or supervisors was not important for the work attendance of zero-absentees.

Supervisors play an important role in managing sickness absence. Nyberg et al. [29] found that inspirational leadership was associated with fewer short episodes of sickness absence in the Swedish workforce. Schreuder et al. [30] found that effective leaders had lower numbers of both sickness absence days and short episodes of sickness absence in their teams. Apparently, supervisors are not as important in managing work attendance among zero-absentees. All the more because personal norms and upbringing cannot or just minimally be influenced by supervisors. Although esteem rewards were important for zero-absentees, their work attendance seems to be driven by intrinsic rather than extrinsic motivation. Intrinsic motivation refers to doing an activity for the inherent satisfaction of the activity itself and contrasts with extrinsic motivation, which refers to the performance of an activity in order to attain some outcome, such as relieved external pressure or financial rewards [31]. According to Deci and Ryan, intrinsic motivation initiates behavior and specifies nutrients that are essential for psychological health and well-being of an individual [32]. The self-determination theory focuses on the degree to which an individual's behavior is self-motivated and self-determined. It is a theory of human motivation and personality, concerning people's inherent growth tendencies and their innate psychological needs. The theory addresses the motivation behind the choices that people make without any external influence and interference. Different types of motivations have been described based on the degree they have been internalized. Internalization refers to the active attempt to transform an extrinsic motive into personally endorsed values and thus assimilate behavioural regulations that were originally external [33]. Deci and Ryan later expanded on the early work differentiating between intrinsic and extrinsic motivation and proposed three main intrinsic needs involved in self-determination [34, 35]. These needs are said to be universal, innate and psychological and include the need for competence, autonomy, and psychological relatedness [32].

Zero absentees are intrinsically determined to achieve work attendance and actively seek solutions for barriers of work attendance. Self-efficacy alone could not explain the findings of a zero-absentee's general positive attribution, perseverance when barriers or setback emerged, focus on instrumental support and adjustment latitude, and creativity in finding alternative solutions. These capacities point to a construct called positive psychological capital (PsyCap)[36]. Four positive psychological resources identify this construct: hope, self-efficacy, resilience, and optimism. Hope, resilience and optimism are not synonymous to self-efficacy, but attribute to this capacity. Self-efficacy and hope share the components of internalized motivation and energy, or the positive expectation of success for the reason of belief in one's individual abilities. However, the pathways component, or the ability to generate alternative pathways toward specific goals, is unique to hope. Self-efficacy, hope, and optimism all share positive expectancies about the future. However, optimism may be more general in nature and may constitute a global positive expectation of success, whereas hope and self-efficacy tend to be more specific to a particular goal or domain. Similarly, resiliency is not limited to an internalized, agentic perspective, but expands the circle of influence to include social support and other organizational resources and buffering mechanisms [37]. Previous research has demonstrated that PsyCap is related to performance [38], sickness absenteeism [39] and to desirable behaviors (staying late on the job to help a coworker or supporting a newcomer to the group) and negatively to undesirable behaviors and attitudes (cynicism, harassment, sabotaging and intention to quit). PsyCap, as well as each of its constituent capacities, is considered state-like and may be developed [36, 38]. Improving performance outcomes in this context is known as positive organization behaviour (POB) and is faced towards positive health outcomes and sickness absence. [36,39,40].

### Strength and Limitations

The strength of this study was its explorative, qualitative design providing insight into what characterizes zero-absentees. Another asset is that this is the first study that investigated uninterrupted long-term work attendance over a period of five years. Until now, only 1-year work attendance was examined [3,4]. All employees worked in the same organization and were therefore comparable with regard to the work environment and organizational policies and practices. This is important, as sickness absence is part of a social exchange process that is influenced by organizational cultures [41-43]. Another asset of the study was that interviews preceded the focus groups so that key themes could be developed without the pressures from group discussions. Subsequently, the focus groups were used to validate the key themes.

A limited number of interviews and focus groups were performed, which might restrict the generalizability of the study results. However, unlike quantitative

research, the aim of this qualitative research was not to find results that are widely applicable, but to gain detailed insight in the characteristics of zero-absentees and mechanisms underlying zero-absenteeism. The use of the same moderator for interviews as well focus groups bears a limitation for moderator bias can occur. The moderator can influence the answers by, for instance tone and body language. We tried to avoid that by letting the moderator stay as neutral as possible and avoid opinions when moderating.

### Practical Implications

Zero-absentees creatively invent ways to achieve work attendance. The search for opportunities to attend work seems to be driven by intrinsic motivation, upbringing and personal norms and beliefs that are difficult to influence. However, zero-absentees could be an example for their colleagues and may be an important resource for instrumental support to stay healthy, achieve balance, and prevent work-family interference as causes of sickness absence.

Zero-absentees may also provide input to team norms and beliefs about sickness absence. It may be interesting to study the effect of engaging zero-absentees in the management of sickness absence behaviour in organizations.

The construct of PsyCap could be the pathway in a process-orientated approach of coaching and support towards work attendance of employees and POB. Future research on sickness absence management and zero-absenteeism should extend to this construct of PsyCap and its separate components of positive psychological capacities.

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# Five years of zero-absenteeism: potential source of team- empowerment and lower sickness absence in healthcare

Submitted

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## ABSTRACT

**Background:** Zero-absentees are intrinsically motivated to attend work. Zero-absentees also have strong norms and beliefs about work attendance and seem to possess positive capacities that may empower colleagues. This study investigates the actual and potential influence of zero-absentees on sickness absence in teams and organizations.

**Method:** A qualitative study comprising 16 semi-structured interviews and 2 focus groups (N=8 and N=7) with healthcare employees who were zero-absentees for at least 5 years.

**Results:** Zero-absentees possess positive psychological capacities, which help them to attend work more easily. Zero-absentees thought that positive team behaviour contributed to preventing sickness absence. When colleagues are ill, zero-absentees perceived that the team norm contributed to sickness absence. However, zero-absentees did not discuss this with colleagues, because they are of the opinion that it is a responsibility of the supervisor to address sickness absence behaviour.

**Conclusion:** Supervisors can motivate zero-absentees to empower colleagues towards more positive psychological states and positive team behaviour, which may reduce sickness absence rates.

## INTRODUCTION

Zero-absenteeism can be seen as the counterpart of frequent sickness absence. Frequent sickness absence often consists of high rates of short-term episodes lasting several days. Such short-term sickness absence is usually interpreted as ‘voluntary’ [1] and can be regarded as a type of avoidant coping when employees report sick to withdraw from work-related stress and strains [2]. Alternatively, frequent short sickness absence may reflect a functional problem solving coping behaviour when employees take short times off work to recover and prevent long-term sickness absence [3,4]. However, organizational policies and practices (OPPs) with regard to sickness absence often focus on work attendance. Attending work despite the feeling that, in the light of perceived ill health, one should have taken sick leave is known as sickness presenteeism. More than 70% of a random sample of 12 935 employees of the Danish workforce reported working through illness at least once during a 12-month period [5]. A third of the employees in a stratified subsample of 3801 employees of the Swedish workforce reported that they had worked two or more times during the preceding year despite feeling ill [6]. Sickness presenteeism is most prevalent in the healthcare, welfare and education sectors while sickness absence is also high in these occupations. Sickness presenteeism at baseline was found to be consistently associated with a higher risk of poor health at both the 18-month and 3-year follow-up [7]. Going to work when feeling ill was also a significant risk factor for sickness absence exceeding 30 days three years later [8].

Zero-absentees are neither sickness absent, nor report sickness presenteeism [9]. Probably, they actively prevent illness and make decisions about work attendance when having complaints. Zero-absentees were found to be intrinsically motivated to go to work and did not attend work because of pressure of their supervisor or teammates. The personal norms and beliefs of zero-absentees are strong determinants for attending work. Positive psychological capacities, such as self-efficacy, resilience, hope and optimism may play an important role in work attendance.

### Background

In the field of positive psychology, psychological capital [10] is an important construct, which is linked to personal well-being. Psychological capital (PsyCap) encompasses the positive psychological capacities resilience [11,12], optimism [13], hope [14], and self-efficacy [15]. Resilience represents an individual’s ability to rebound from a setback or failure and “bounce” to a higher level of motivation [16]. Resilience enables individuals to interact with their environment and promote well-being, herewith protecting them against the overwhelming influence of risk factors [17]. Optimism is explained by Carver and Scheier [13] who state that optimists are individuals, who simply expect good things to happen to them, which has significant cognitive and behavioural implications. Hope is a learned style of goal-directed thinking in which the person utilizes both pathway-thinking (the per-

ceived capacity to find routes to desired goals) and agency-thinking (the requisite motivations to use those routes) [18,19]. Hope comes up when there is considerable uncertainty about an outcome. It opens up the blinders of fear and despairs, and allows to become creative and have belief in a good outcome [20]. Self-efficacy is defined as one's belief in one's ability to succeed in specific situations. People with high self-efficacy are more likely to view difficult tasks as something to be mastered rather than something to be avoided [15].

These capacities are both in itself and as the composite PsyCap generally related to positive health outcomes and absence behaviour of employees [21]. An important feature is that positive psychological capacities can be developed, which may provide additional opportunities to manage sickness absence. PsyCap can be augmented through training programs, managed/led on-the-job, or self-developed [22,23].

Avey et al. [21] suggested that teammates, who possess positive psychological capacities, could influence the behaviour of others or even a whole team. The purpose of this study was to investigate if aspects of PsyCap are found in zero-absentees and how team and zero-absentee influence each other. Our research question is which actual and potential influence zero-absentees have on the PsyCap of their teammates and their work attendance behaviour.

## METHODOLOGY

### Design and population

In literature two types of work attendance are described: balanced attendance, which means having <7 days of sickness absence in a year, and uninterrupted long-term attendance when individuals have no sickness absence over a period of one or two years [24,25]. In this study, zero-absenteeism was defined as uninterrupted long-term attendance over a period of 5 years, in line with Dutch insurance regulations. The study was conducted in a regional hospital in Drachten (the Netherlands) staffing a total of 1053 employees. For our study those employees were selected who worked in the hospital for  $\geq 5$  years and had not had sickness absence in the last 5 years. A total of 47 employees (43 women and 4 men) fulfilled these inclusion criteria. These employees received a letter in which the procedure and the goal of the study were explained. Next, they were contacted by telephone to ask for participation. Of 47 zero-absentees, 31 agreed to participate in our study (30 women and 1 man). A random list was made and participants with odd numbers were invited for the interviews. The interviews were performed until saturation occurred. The remaining participants were invited for the focus groups. The interviews and focus groups were performed by the same and independent moderator. Zero-absentees were allowed to overview their whole work life. Hence, answers were not restricted to the 5 years that they were zero-absentee. After a first analysis of the data on characteristics of zero-absentees [9] using theory of planned behaviour,

the data were retrospectively evaluated by using the construct of PsyCap and its components.

## Interviews

First, semi-structured interviews were performed to provide insight in the factors that characterized zero-absentees. A topic guide was used as a prompt for questioning. The key question was: What makes you a zero-absentee? The direction in the interviews was guided by the participants' answers to this key question and their individual experiences. After 16 interviews, saturation was reached i.e. no new information or insights occurred from the interviews. The interviews took place on an independent location in the hospital and lasted approximately 50 (range 40-65) minutes.

## Focus groups

The information gathered with the in-depth interviews was used as input for two focus groups in which 15 employees (N=8 and N=7) participated. Participants were presented with a summary of the interview findings and were encouraged to develop or reject the ideas presented to them, which is a method of respondent validation [26,27]. Both focus groups took place on an independent location in the hospital and lasted 55 and 70 minutes. The group discussions were taped and transcribed verbatim. For describing the factors and processes related to zero-absenteeism and team influence, the first step was data collection. Key points were marked with a series of codes and the codes were grouped into similar concepts. From these concepts, categories were formed corresponding with the positive psychological capacities.

# RESULTS

## Positive psychological capacities

### Self efficacy

Self-efficacy was investigated in our previous study [9].

### Resilience

When confronted with recurrent medical complaints, zero-absentees felt helpless at first but learned to prevent complaints or cope with ill health without taking days off work. They experienced that attending work made them feel better most of the times. Finishing the shift made them feel rewarded by their own appraisal and "bounced" them to a higher level of motivation to attend work the next time again.

*...I know now when I get in my winter depression period I feel awful but then it feels better when I have gone to work (...) it puts you to the test every day but I know it helps me...*

Several zero-absentees also mentioned to be less affected by work stress, because they could more easily delegate responsibilities to other colleagues, take measures to regain balance again instead of feeling overwhelmed by work.

*...work pressure does not restrain me easily (...) it is not that I don't feel stressful, but I take time to consider things and then I take up work again (...) I do not perceive limitations as severe as others do...*

### Optimism

Participants often mentioned their constitution as a reason for not getting ill and they expect that this make them less vulnerable to illness. They believe that healthy foods, taking a rest when they are tired or extra vitamins when they feel signs of illness coming up, will prevent illness. They stay positive about the opportunities to work when having complaints and expected good things to happen to them.

*...when you are ill you can always mean something for your patients or colleagues (...) I always try to see the other side of things, from the negative also find the positive side (...) you can always find something you can do at work...*

### Hope

Some zero-absentees told about a life event or a medical problem hindering work. However, their hope made them searching for ways to achieve work attendance. Adjustment latitude was something they actively examined, creatively enlarged and applied.

*... I had a severe acute infection in both my legs (...) I did not want to absent work (...) I put wet patches around them to cool down and put on supportive panty hoses. During work it did get worse so I went to the ER (...) colleagues told me to go home, but I didn't want to. They taped my legs and I went on working again...*

### Direct influence

Zero-absentees mentioned that they did not discuss sickness absence behaviour with their colleagues, because they did not want to judge the decisions of colleagues taking sick leave. However, zero-absentees wished that some colleagues knew how it feels to be confronted with repeated sickness absence.

*...the young generation is more easily absent for a few days because of their kids (...) I have an opinion about that but do not discuss it, because the absence of my colleagues is none of my business...*

*...I have a friend in my team who repeatedly calls in sick (...), she told me I needed a little bit of rest, but to my opinion that is not a reason to call in sick. (...) I didn't tell her though what I thought of it...*

### Indirect influence

Despite the fact zero-absentees do not directly discuss sickness absence with their colleagues, their annoyance about sickness absence is expressed mutually or to the supervisor, especially when colleagues call in sick repeatedly or without evident medical reasons. Although zero-absentees do not know if their annoyance reaches the person in question, they do exert an indirect influence of zero-absentees on the sickness absence behaviour in teams.

*...we talk in the team about colleagues who are repeatedly sickness absent (...) then there is annoyance in the team about those colleagues, especially when the reasons for absence are not clear...*

*...my supervisor talked to a colleague who was frequently sick (...) he told her she had to try or look out for another job, afterwards it went better (...) for me it was really difficult to accept that after that she did not take sickness absence so frequently anymore...*

Some zero-absentees tried to indirectly influence people by discussing what they did themselves to stay healthy and prevent sickness absence. Others tried stop taking offence of these colleagues and not spoil their own pleasure in work. Some zero-absentees stated that it is impossible to change people, so it is no use to try to influence them.

*...I sometimes say to my colleagues: when I don't exercise two times a week I could not cope with this job, or in any way with more complaints. (...) just spoken in general or when the topic is coming up during a break...*

Most zero-absentees mentioned reluctance to address the behaviour of colleagues. The main reason for this reluctance was the concern to influence the team-atmosphere negatively, although the opinion was that recurrent sickness absence or absenteeism without medical reasons was not acceptable. Possibilities to speak out were seen in official or unofficial work meetings, especially when sickness absence was a subject on the agenda.

*...I would want that we talked about what you can do to prevent health problems...*

*...It would be easier to speak out when sickness absence is a topic in a group meeting or during a coffee break...*

## Team norm

Although zero absentees perceived the role of the team as an important reason for their own work attendance, they mention that team norms towards promoting work attendance are not clear. They observe an opposite team norm: when colleagues are ill and sent home.

*...in my team we are very kind to each other. In the other team [in the same ward] people are more directly telling you, 'what are you doing here, go home'. In our team it is more like: oke, maybe you can better go home (...) a few colleagues do that, but not everyone...*

Zero-absentees stated that helping each other was an established practice and that it was always possible to discuss transient duties to stay in the work process. Some zero-absentees mentioned they rather wanted colleagues to go home ill, for they did not want to feel responsible for them too. When colleagues decided to take sick leave, the managing of return to work was seen as a responsibility of the supervisor.

## Positive team behaviour

Zero-absentees acknowledge the importance of positive team behaviour in preventing sickness absence. The efficacy of their team was perceived as an important factor in preventing strain. Participants appointed high confidence in the ability of their team in solving problems and fulfilling common tasks.

*...If somebody drops out we look at the work schedule (...) some colleagues quickly take the lead and arrange replacement even without help of our supervisor (...) we can solve understaffing ourselves...*

Zero-absentees felt their team as a positive influence on their state of mind in work. It made them want to be at work and contribute to the team performance. Also they felt free to put extra effort in their work and felt a collective responsibility to do so, which gave them pleasure in their work. Zero-absentees cited their contribution in team spirit like planning social activities. Several times, the importance of including other members, for example ward-assistants and secretaries, was mentioned.

*...team spirit is important because our job can be hard and emotionally demanding (...) we even have a special group in our team that plans social team activities...*  
*...when a colleague of mine started working again after breast cancer our team really made her feel welcome (...) although she could not do a lot in the beginning we always showed our satisfaction with her contribution...*  
*...I like my work and my team makes me want to be a part of it...*

Working together, when things get serious or workload is high, was mentioned as processes that strengthened the team. Sharing emotions was seen as crucial to professional performance and to prevent taking work emotions to home.

*...some colleagues perceive a lot of stress because of the introduction of electronic patient files (...) as a team we produced a plan to support these colleagues and that worked (...) especially the young ones helped the old ones (...) It gives that extra feeling afterwards you really are a good team...  
...sometimes when young patients die, you feel down (...) you feel like you and the team failed (...) we talk about that and it helps you to get back give again all the care to the next patient...*

Keeping in contact with sick-listed colleagues or colleagues experiencing stressful life-events was also seen as a positive way to sustain team spirit and was seen as a positive team capacity to keep the team together.

*...my daughter had had a serious accident and she was six weeks on the intensive care (...) I did get the time to be with my daughter and my colleagues were considered and supportive...  
...our team really put a lot of effort in keeping contact [with absentees] (...) I don't know how many postcards I already sent in the last years, it must have been hundreds...*

## DISCUSSION

### Positive psychological capacities

This qualitative study shows that zero-absentees possess positive psychological capacities. Zero-absentees showed goal-directed thinking when barriers hindered work attendance. Their hope showed in the determination to meet the goal of work attendance (agency) and the ability to generate the means of attaining work attendance (pathway). Snyder et al. [28] demonstrated strong support for the positive health outcomes of hope. For example, individuals high on hope engage more in prevention-focused health activities, such as physical exercise, and show a stronger ability to cope with pain and stress than individuals low on hope.

Zero-absentees are resilient in the sense that they had the strength to tackle problems head on and stayed calm when stress occurs. Resilient individuals are less likely to perceive stress or perceive stress to a lesser extent than non-resilient persons. As a result, resilient individuals may have better health outcomes and may therefore be less frequently absent [21]. In a qualitative study among mental health clinicians, Edward [29] stated that resilience could be important to reduce the risk of burnout and staff attrition.

Zero-absentees present themselves as optimistic. Their explanatory style is focused on the cause of them being a zero-absentee. Zero-absentees seem to have internalized the cause for being a zero-absentee (personalization), perceive this cause as

sustained (permanence) and experience the cause as affecting other aspects of life (pervasiveness) [30]. Zero-absentees judged themselves as healthy and when ill, they stayed optimistic about their capacities. Seligman and Martin [31] connected the optimistic explanatory style to well-being. Strassle et al. [32] stated that optimism could effectively be used as an indicator of psychological health. Research has demonstrated that optimists are less likely to have certain diseases or develop diseases over time. [33-35]. Kivimäki et al. [36] found that optimism reduced the risk of health problems and may expedite recovery after a major life event. West et al. [37] found that self-efficacy, optimism, and resilience, which have all been found to impact positive individual level outcomes, also functioned at the team level. Hence, it would be interesting to further investigate the relationship of team-efficacy, team-resilience, team-optimism and team-hope with positive team behaviour and team sickness absence levels.

### Team Influence by zero-absentees

Zero absentees did not directly discuss sickness absence with teammates even if they disapproved of sickness absence behaviour and suffered from the negative effects of such behaviour. It is not because zero-absentees do not know how to criticize negative behaviour, but they feel reluctant because they do not want to influence team spirit negatively. They are of the opinion that it is the responsibility of the supervisor to address sickness absence.

Zero-absentees are indirectly influencing teammates on the interpersonal level as well as on the normative level. Research on social influence is characterized by a recurrent debate about whether influence exerted within groups is primarily an interpersonal phenomenon, e.g. brought about through attraction or interdependence, or whether it is better explained by social identity-related factors such as group norms [38]. Edmonson [39] suggested a group-level perspective on organizational learning, which emphasizes interpersonal perceptions and behaviours. Nicholson and Johns [40] stated that members of a social unit, such as a department or a team, share a common set of psychological agreements with another party, such as a supervisor. They see those psychological agreements or normative contracts as important for the absence culture in organizations. The results of our study indicated that zero-absentees have opinions about psychological agreements and indirectly contribute to normative contracts in teams, but do not wish to influence them explicitly.

## Team norm and team culture

The team norm was an important aspect, but zero-absentees perceived the team norm as faced towards work absence rather than work attendance when colleagues are ill. In healthcare, acting like a patient seems to be prescribed by colleagues who send someone with health complaints home. Research has already shown that sickness absence is affected to a varying extent by the collective behaviours of others. Employees learn through their interactions with other teammates or organizational members. After a while, employees know how much absence teammates and supervisor accept. Individuals may experience social pressure to raise or lower their level of sickness absence to a norm, that has been established in the team or the organization [41,42].

## Strengths and Limitations

A strength of the study was that themes were first explored by individual interviews so that the answers were not influenced by group discussion. The focus groups were used to further develop the themes. Registered sickness absence data were used to identify 5-year zero-absentees, because self-reported sickness absence may be recall-biased [43]. All zero-absentees worked in the same organization and were therefore comparable with regard to working conditions, work environment and organizational policies. This is important as Chadwick-Jones et al. [44] and Carmeli [45] found that sickness absence is part of a social exchange process that is influenced by organizational culture [44-47]. A limited number of interviews and focus groups were performed, which might restrict the generalizability of the study results. However, the aim of this qualitative research was not to find results that are widely applicable, but to gain detailed insight in the characteristics of zero-absentees and mechanisms underlying zero-absenteeism. The use of the same moderator for interviews as well focus groups may have biased the results. The moderator may have gained ideas about zero-absenteeism, which may have influenced the course and discussions in the subsequent focus groups. We tried to deal with this potential bias by instructing the moderator to stay as neutral as possible and avoid expressing opinions in the interviews and focus groups.

## Practical Implications

The construct of PsyCap can be applied to develop and improve leadership effectiveness and employee performance. Zero-absentees have higher positive psychological capacities and may therefore play an important role in enhancing the PsyCap of their team, for example by encouraging them to discuss team behaviour openly. By doing this, they may improve inter-individual support within the team and increase the team spirit. Future research should be done on how to encourage zero-absentees to positively influence team behaviours.

Organizations can also use PsyCap in their organizational policies and practices towards a more pro-active personnel management. It may be useful to engage zero-absentees in the development or adjustment of organizational policies and practices, because they are high in positive psychological capacities and possess strong personal norms and beliefs about the importance of work in people's lives.

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# Discussion



## DISCUSSION

### Main Results

This study unfolds new information in sickness absence management. The three most important players, which each their own responsibilities and considerations are discussed: the employee, the supervisor and the occupational physician (OP). The different factors and roles in the process of sickness absence behaviour are highlighted. All stakeholders can benefit from the results in improving managing sickness absence.

### Health, work characteristics and short-term sickness absence

The predictive value of short-term sickness absence for future absenteeism [1] contains possibilities for organizations in sickness absence management. Higher short-term sickness absence was found in the younger employees and employees working more hours/week, scoring low commitment, experiencing a low demand-control ratio or a low effort-reward-imbalance, and those perceiving poor general health. Blank & Diderichsen confirmed that age was inversely related to frequent absenteeism. In a study including 13.000 persons of the Swedish workforce, they found that repeated short spells are more common among younger employees and that longer spells were relatively more frequent among older employees [2].

The fact that the number of work hours per week was positively related to short-term sickness absence has also been confirmed in literature. Irrespective of gender, people in part-time employment have significantly fewer spells of short-term sick leave than those working full-time [2]. According to Froggatt, short-term absence may be an expression of a desire to work discontinuously: that is, the weaker the level of control, the greater is the "proneness" to be absent from work for short periods [3]. Obviously, women who work fewer hours are less absent because sickness on days they do not work is not reported to the employer. However, in our findings women with small work contracts did not have fewer sick days.

Low frequent absentees had higher over-commitment scores than high frequent absentees. Overcommitted employees find it difficult to withdraw from work obligations and are likely to be present at work even when ill, which is known as sickness presence [4]. The highest sickness presence levels are found in health care, welfare, and education sectors where employees take care of others [5]. Earlier, it was reported that sickness presence levels among workers in Nordic elderly care rose more sharply with increasing levels of job stress than sickness absence levels did [6].

Over-commitment and the responsibility in caring for others can give the feeling that work is demanding, which may explain our findings that high demand-control ratios were associated with fewer short sickness absence episodes. In the literature, high job demands were found to be related to fewer short sickness absence periods, but then in men and not in women [7]. In French blue collar and Belgian white-collar workers the opposite was seen with high job demands related to more sickness absence spells [8,9].

Effort-Reward imbalance was related to more frequent short absenteeism. A similar relation between a high effort-reward ratio and short spells of sickness absence was found in several studies. Here the relation between poor self-reported health and effort-reward imbalance (high efforts and low reward) was reported [10,11]. Another study has shown that effort-reward ratios higher than one were associated with an increased risk of adverse health effects, because the efforts made were not counterbalanced by sufficient rewards [12]. These studies together support a causal relationship between effort-reward imbalance and poor health among nurses. Poor general health was associated with frequent short-term absence. In the literature, it is assumed that there is a strong association between ill health and sickness absence [13]. Poor health was not only directly related to sickness absence, but also associated with coping styles. Coping and short-term sickness absence was the theme in the subsequent studies.

## Employee

Employee's sickness absence behaviour is often the main focus in sickness absence management. In our results baseline passive coping styles, like avoidance and awaiting what happens, were related to more frequent short-term absenteeism in the following year. Active problem-solving coping was related to a lower frequency of episodes of long-term absenteeism but not with short-term absenteeism in the following year. High scores on social coping were related to fewer episodes of short sickness absence in the following year. Previous results confirm our findings, showing that emotion-focused coping strategies, such as distancing and avoidance, were each correlated with poor general health [14]. Distancing, resignation, and avoidance, were also reported to be related to negative psychological health outcomes. The association of passive coping with poor mental health is in agreement with the results of previous studies on nursing stress and emotion-focused coping in hospital nurses [15,16]. Probably poor mental health leads to sickness absence by application of less active coping and more passive coping styles. Mediation analysis is needed to investigate the pathways between health, coping and sickness absence in more detail.

## Occupational physician

In the Netherlands, occupational physicians (OPs) advise and guide sick-listed employees during the process of return to work. The reliability of the ratings of the OP in the first consultation on an employee's readiness to return to work (RRTW) was investigated. Knowing an employee's RRTW can be important for supervisors to better support the RTW-process. An employee's RRTW is usually based on self-report measures and may therefore be biased by feelings of uncertainty about work ability and fear-avoidance beliefs. While counseling sick-listed employees, the OP may examine the employee's RRTW and coach both employee and supervisor in the RTW-process. The judgment of the OP showed a large variability, probably due to heuristic decision-making, and is therefore not reliable. Other studies have also reported wide variability's in the OP rating of RTW recommendations [17,18].

## Supervisor

Supervisors are important in sickness absence management for their close cooperation with employees and the OP. In our research leadership styles were studied in relation to sickness absence. Leadership styles were defined according to the situational leadership theory of Hersey and Blanchard [19]. The situational leadership theory [19,20] provides a practical framework for the interaction between managers and employees that is particularly suited for work disability [21]. In our results, relationship oriented leadership styles and effective leadership were related to low frequent short absenteeism. According to the situational leadership theory, managers are effective when they adjust their leadership style to the readiness level of employees or teams [22]. Effective leadership was also related to fewer sick leave days, because of shorter duration medium-term absenteeism (8-42 days) and probably long-term absenteeism (>42 days), though the outcomes for the latter were not statistically significant due to the low number of long-term sickness absence episodes. Effective leaders had higher proportions of employees without sickness absence in their teams. Nielsen et al. noted relationship-oriented managers increase the self-efficacy of employees, which is the belief of being capable to perform tasks or achieve goals [23]. Relationship-oriented managers also positively influence the working environment and foster the staff's organizational commitment. Hence, relationship-oriented nurse managers improve both individual performance and nursing team achievement [24]. In line with findings in the general working population [25] and in health care [26], the results show that relationship-oriented leadership styles are inversely related to sickness absence, which supports the central belief that relationships are the core of nursing leadership [27,28].

## Zero-absenteeism, psychological capital and team influence

In literature little research is found about employees who do not report sick for a certain period. Terms used in literature are longterm work-attendance [29] and work presence [30] and comprise a maximum of two years. Zero-absenteeism is a term we introduced in this thesis. In our study we defined zero-absentees as persons who did not have sickness absence in the last five years. This period was chosen because of social insurance regulations in the Netherlands, in which persons with medical limitations can rely on disability benefits if disorders exacerbate or relapse within 5 years.

Zero-absentees perceive good health and report no sickness presenteeism. Earlier research has shown that a greater frequency of sickness presenteeism was associated with more sickness absenteeism in the following years [31,32]. Ashby and Mahdon found a positive correlation between sickness presence and sickness absence. Employees with higher levels of sickness presence also had higher levels of absence and those with lower levels of sickness presence also had lower levels of absence [33]. Zero-absentees do not report sickness presenteeism and are therefore not at risk of future sickness absence.

Work attitudinal factors, like job satisfaction, commitment and job involvement are also important determinants of zero-absenteeism. It was already shown that high work commitment was associated with a low frequency of sickness absence [34]. Engström & Janson found that work satisfaction is a strong predictor of work presence [30].

Zero-absentees have strong personal norms and beliefs about work presence. Upbringing is an important factor in development of these norms and beliefs. Next zero-absenteeism seems to be driven by internal motivational factors rather than external factors. Reward or recognition from others is for zero-absentees of less importance than their own self-esteem. Intrinsic motivation refers to performing activities for the inherent satisfaction of the activity itself and contrasts with extrinsic motivation, which refers to the performance of an activity in order to attain some separable outcome, like external pressure or rewards [35]. This is in line with the finding that low effort – reward ratios are prospectively associated with a low frequency of sickness absence [34]. Herewith external rewards, in terms of salaries, are also taken into account. Concerning zero-absentees, making higher effort may result in perceiving relatively more self-esteem and so results in a low effort-reward ratio. This suggests self-esteem increases more strongly in zero-absentees than the rise in effort does, which is an interesting perspective for future research. Demanding higher effort may therefore more easily surpass rewards in external motivated employees than it does with zero-absentees. External motivation may have caused our findings of higher levels of 1-year no-absenteeism after management change towards a more effective leader. This suggests these outcomes are

short-term if managers do not sustain the level of external motivation and demanded efforts. To obtain zero-absenteeism and a workforce that is more resilient also attention is needed in developing internal motivation of employees.

Zero-absentees seem more capable than others to create positive outcomes in terms of well-being. They possess positive psychological capacities such as self-efficacy, resilience, optimism and hope. Zero-absentees believe in their ability to solve problems. When looking for support, zero-absentees ask for instrumental rather than emotional support. Avey et al. confirm that efficacious people are more likely to regard work stressors as challenges and tend to display more active coping, i.e. seeking instrumental support, to tackle work stressors [36]. Seeking instrumental support can be seen as a form of social coping and is in line with our findings, that social coping was prospectively associated with a lower sickness absence frequency. Bandura [37] found that individuals with high levels of self-efficacy report lower job stress and self-efficacy has been reported to improve physical and psychological health outcomes [38].

Zero-absentees use goal-directed thinking, agency and pathways, when barriers emerge. Agency and pathways are the interrelated elements of the positive construct of 'hope' [39]. Snyder et al. demonstrated strong support for the positive health outcomes of hope. For example, individuals high on hope engage more in prevention-focused health activities, such as physical exercise, and show a stronger ability to cope with pain and stress than individuals low on hope [40].

Resilience is another capacity zero absentees possess: the strength to tackle problems head on, stay cool and calm when stress occurs and go on with their live and work. This ability to cope with potentially stressful situations and not be as affected by such prevalent workplace concerns should lead to an individual experiencing less of the negative health outcomes of stress and thus display less absenteeism behavior [36]. In a qualitative study among mental health clinicians, Edward (2005) stated that resilience can be important to reduce the risk of burnout and may promote staff retention and occupational mental health [41].

Zero absentees present themselves as optimistic. Martin Seligman defined optimism in terms of explanatory style, which is based on the way one explains life events [42,43]. Zero-absentees judge themselves as very healthy and when ill, they stay positive about their abilities. Strassle et al. [44] stated that optimism can effectively be used as an indicator of psychological health. Kivimäki et al. found that optimism reduced the risk of health problems and may be related to a faster recovery after a major life event [45].

Zero-absenteeism was mainly found among older employees with a mean age of 49 years. The capacities to become a zero-absentee seem to develop over time. This is supported by Luthans, one of the founders of the construct of Psychological capital

(PsyCap). PsyCap and its components: resilience, self-efficacy, optimism and hope are state-like and open for development and change [46,47].

At the same time zero-absentees value positive organization behaviour of their team as contributing to the prevention of sickness absence. But when ill, zero-absentees perceive the team norm as contributive to sickness absence rather than work attendance. Although zero-absentees themselves are not influenced by this team norm they observe other colleagues do. In healthcare, when ill, colleagues tend to actively take over limited tasks or send the ill colleague home and so reinforcing the sick role as a patient. Instrumental support from colleagues by broaden adjustment latitude, like adjusting tasks or find fitting solutions, is not seen.

The influence of zero-absentees themselves on team members is primarily indirect, in case of sickness absence behaviour. Zero-absentees regard addressing sickness absence as the responsibility of the supervisor. Reluctance to address colleagues themselves is caused by the fear this will affect the team spirit negatively. Earlier research showed that individual sickness absence is affected to varying degrees by the collective behaviours of others. Employees learn how much absence is expected by co-workers and management, through their interactions with other group members or organizational members. They may experience social pressure to increase or reduce their level of absence to the norm that has been established in the team or organization [48,49]. Avey et al. showed that psychological capacities provide a useful perspective for managing sickness absence and can improve an individual's absenteeism behaviour [36]. West et al. [50] expressed that team optimism, team resilience and team efficacy are important predictors of team outcomes. Team-efficacy itself has been reported to improve physical and psychological health outcomes of individuals [38].

## METHODOLOGY

This section summarizes some strength and limitations of the studies.

### Strengths

#### Sickness absence data

The strength of the studies is that registered sickness absence data were used instead of self-reported sickness absence. The validity of self-reported sickness absence data is subject to debate. The agreement between the self-reported and recorded occurrence of sickness absence ranges between 85% [51], and 96% [52], from which it was advised that self-reported sickness absence data may be useful in common epidemiological applications [53]. However, the self-reported number of sickness absence days is generally lower than the recorded number of sickness absence days [53,54]. The sickness absence data in this thesis were employer-registered and were complete for all participants. All employees were comparable with regard to working conditions, working environment, and organizational policies. This is important because recurrent changes in working conditions and policies were found to be associated with job distress among nurses [55]. Differences in sickness absence rates were found to be caused by differences between organizations [56].

#### Study designs

Another asset of this thesis is the combination of studies with different designs. Results of cross-sectional studies could be confirmed in prospective studies and a controlled before – after study. Results are more valid and reliable when associations are confirmed in studies of different design. Furthermore, cross-country differences in health, working conditions and coping styles were investigated in a study comparing Dutch hospital nurses with Norwegian hospital nurses. Finally, knowledge about zero-absenteeism was extended by qualitative interview and focus group studies.

A further strength of this thesis that this is the first to explore the factors associated with long-term zero-absenteeism. Until now work attendance was examined for periods up to two years [29,30].

#### Reliability and validity

Different sources of information were used, for example the questionnaire for health and working conditions for the nursing staff, the LEAD questionnaire for nurse managers, the hospital's sickness absence register and information from interviews and focus groups, which improved the reliability and validity of the findings [57].

## Limitations

### Study design

The questionnaire results may have been biased by response styles and personality characteristics. We tried to take this weakness into account by using validated instruments in the questionnaire. However, individuals characterized by negative affectivity, for example, may have higher sickness absence levels and are likely to have complained more about their working conditions and working environment. Furthermore, the fact participants were asked to look back into their past work in the interviews and focus groups

### Study population

The hospital's sickness absence was stable at around 3% during the study period. This is a low percentage in comparison to an average organizational sickness absence of 6% in Dutch healthcare. The low percentage and the specific sickness absence policies in the hospital may have made it more difficult to find differences in sickness absence levels or discover relationships between variables and sickness absence. For instance, leadership effectiveness may play a more important role in managing sickness absence when organizational sickness absence is high. Effective managers can more easily influence high sickness absence rates than further reduce lower sickness absence rates. Also, the people in our study population were working in the hospital for at least 3 years and may therefore be a selection of the healthiest individuals who enjoy their work. The healthy worker effect is a well-known source of bias in occupational healthcare research [58,59].

### Leadership effectiveness

Leadership effectiveness was assumed to be constant over time. Manager effectiveness may have evolved during the study period, although leadership effectiveness was fairly constant over a six weeks interval [60]. Furthermore, leadership styles were based on information provided by the managers themselves. It has been reported that asking employees to rate their leaders by using the LEAD-Other questionnaire is a better measure of leadership practices [61-63]. However, a validated Dutch version of the LEAD-Other questionnaire is not available. Other approaches are available to measure leadership effectiveness as in transactional and transformational leadership. We did not use these approaches for they are less convenient in guidance of employees with sickness absence in return to work.

### Generalization

The study population was limited to employees working in one hospital. Although similar working conditions, working environment and organizational policies could be assumed, the disadvantage of this convenience sample is that the results may not be generalisable to other healthcare organizations, all the more because sickness absence practices and cultures differ between organizations [56].

## PRACTICAL IMPLICATIONS

### Organizations

The research yielded results with important implications for occupational healthcare in general and all stakeholders involved in the return to work process of sick-listed employees in particular. Different stakeholders play a role in effective sickness absence management. Organizations have a lot to gain from effective sickness absence management. Not only in the sense of health and well-being of employees, but also in economic performance. In the Netherlands the loss of a workday is estimated approximately 300 Euro per workday per fulltime-equivalent. So effective sickness absence management means competitive economic value.

Organizations have to create supportive frame-work conditions, like an adequate sickness absence registration system, expertise in management control information, effective and skilled managers, an adequate team support and experienced OPs. Organizational policies and practices (OPP) should focus on work-attendance together with an introduction of positive psychological capital, to achieve durable sickness absence reduction. Suggested is to involve zero-absentees in development of OPPs. Within this, more attention must be given to frequent short-term sickness absence, its derivatives and causes to attain an adequate approach towards sustainable lower sickness absence rates. A more tailor-made approach is necessary to different types of sickness absence. Adopting psychological capital (PsyCap) and positive psychological capacities helps individuals and teams focus on people's resources and the capacity to improve health and keep good health despite health risks and disease. Organizations should not regard sickness absence management as an obligation but as a chance to perform well as an organization.

### Effective leadership

The reason for the model of situational leadership was our experience in daily practice. We encountered supervisors struggling with employees showing behaviour on a different readiness level when ill, in comparison to how they behave in normal work situations. The approach of the supervisor in managing sickness absentees was often inappropriate, which hindered the outcome in terms of RTW. We assumed that when supervisors would be able to rate an employee's RRTW they could choose the fitting leadership style and so effectively influence sickness absence. Supervisors can be seen as 'change agents' in organizations for their enhanced cooperation with employees and their role in enforcement of policy objectives. Leadership effectiveness should therefore be a priority topic in organizations. Sherman et al. [64] concluded that there is a need to formally develop and mentor next generation nurse managers, especially in financing and budgeting, communication skills, leadership behaviours, and effectiveness. Interpersonal effectiveness, which is the ability to communicate, listen, and facilitate, was felt to be a key

competency for managerial success [65]. The theory of situational leadership may support the development of this competency by training managers in assessing an employee's readiness level and subsequently use leadership styles that match with the readiness level. It is possible to obtain changes in leadership behavior through leadership training as part of a management development series for nurse managers. Within the context of the situational leadership theory, six months after training, a 22% change toward a more even distribution of leadership scores was observed among 11 nurse managers [66]. However, the authors did not report the influence of these changes on employee performance. Future longitudinal research has to reveal the effects of management changes and management training on staff productivity, well-being and satisfaction as well as the quality of care and patient safety.

Important topics in situational leadership on sickness absence management are the readiness to continue work or return to work, development of positive psychological capital of nursing teams and improve coping styles and mechanisms. Supervisors should learn to recognize different coping styles and the positive psychological capital of employees in relation to sickness absence behaviour at the individual and team level. Organizations have to assure these skills are part of the competence-spectrum of nurse managers and train these skills when not available.

Making use of teams strengths is needed to help supervisors manage sickness absence behaviour. To accomplish an adequate team influence, team support should focus more on instrumental support than on emotional support only. Also adjustment latitude should focus on helping colleagues to carry out their own tasks instead of taking over those tasks. Automatically sending colleagues to home when they are judged too ill to work by their teammates should be prevented, when this unnecessary reinforces their sick role as a patient. Positive psychological capital of individuals and teams affects sickness absence. Supervisors could take advantage of zero-absentees to influence team norms of work attendance. Creating an adequate platform may eliminate the reluctance of zero-absentees to address sickness absence behaviour and may encourage them to appreciate their accomplishment to overcome barriers or set-backs openly.

In many organizations performance interviews are annually recurring meetings between the supervisor and employee. These interviews can be used to discuss team norms and sickness absence behaviour with individual employees.

When presumed medium-term or long-term SA arises, supervisors have to keep in mind fear avoidance belief can be an important reason for employees to absent themselves of work longer than necessary [67]. Many employees still hold the opinion that physical activities and work may have adverse health effects in the sense that it aggravates pain and other symptoms. This belief results in the avoidance of physical and social activities, also known as fear avoidance behavior. The OP is the official who can effectively help the employee to overcome this limiting process of

fear avoidance belief. Supervisors should therefore encourage a prompt reference to the OP when fear avoidance belief is presumed.

### Occupational physician

Accurate rating of the readiness level of employees by OPs could help employees and supervisors in the return to work process. It also provides the opportunity to advise supervisors on the leadership style that suits best to coach the employee in his/her return to work. The results in this thesis show that an OP instrument is essential to improve the quality and consistency of the readiness rating of sick-listed employees by the OP. Franche et al. [68] developed and validated the Readiness for Return-to-Work scale for long-term sick listed workers with musculoskeletal disorders. This instrument provides scores representing different stages of readiness. It might be a relevant instrument in work disability research to facilitate the offer of stage-specific services, in terms of readiness level, tailored to injured workers' needs, and be used for evaluation of return-to-work interventions. Brouwer et al. [69] have translated this scale into Dutch by cross-cultural adaptation and empirical testing of the Readiness for Return-to-Work scale in Dutch sick-listed workers. However, this instrument has not been investigated as a physician's instrument. Future research has to reveal whether return to work recommendations are more consistent among OPs who use this instrument to rate an employee's readiness to return to work.

Standardized instruments have a greater chance of having acceptable consistency or reliability of work-related assessments [70]. Spanjer et al. found a 76% (range 64 – 88%) agreement between 12 insurance physicians (IP) when IPs used standardized instruments to record physical (FIS) and mental (MAL) work limitations to rate occupational disability [71].

Also OPs should focus more on fear avoidance belief of employees for this belief influences employee's readiness to actively participate in work again. Herewith helping the employee to overcome this threshold in continuation of work or return to work. In earlier research was suggested that successful reduction of pain-related fear and disability may foster increased participation in daily and social life activities [72-74]. Early reference to the OP can change this belief and lower this psychological barrier to resume one's own tasks. Offering these tasks with appropriate backup of the supervisor and the team will affirm the restart of one's tasks. Cooperation of the OP and the supervisor in analyzing the employee's readiness level and the fitting leadership style, next to the instrumental support of the supervisor and the team is seen as crucial.

## Sickness absence behaviour of employees

An overall impression of sickness absence behaviour in teams is recommended to supply a tailor-made approach and adequate support for supervisors and their teams. This review, or mapping, of employee's sickness absence behaviour ought to contain a categorization of frequent short-term absenteeism, suspected sickness presenteeism and zero-absenteeism. For supervisors to be able to make this mapping of their team, a sufficient sickness absence registration system must be available. Performing structural annual meetings between employees and their supervisors around sickness absence behaviour is advised.

In case of short-term sickness absence, the supervisor should get an impression of the employee's ability, in terms of positive psychological capacities, coping, adjustment latitude and the influence of work environment. Koopmans et al. [1] showed how important frequent short absenteeism can be as predictive value of future absenteeism.

Sickness presence has to be discussed by supervisors at an early stage, to prevent sickness absence. Likewise these employees with sickness presenteeism need guidance in how to prevent sickness absence by improving the employee's ability, in terms of positive psychological capacities, coping, adjustment latitude and the influence of work environment.

Employees with long-term medical limitations interfering with their work need special attention. Munir et al. concluded that attendance management polices and the point at which systems were triggered, posed problems for employees managing chronic illness. In organizations these systems present risk to health: employees are more likely to turn up for work despite feeling unwell to avoid a disciplinary situation and mostly absence-related support is only provided once illness progressed to long-term sick leave. Therefore they concluded attendance management should promote job retention rather than merely prevent absence per se [75]. Also compensation of these limitations by colleagues is frequent in daily practice and may increase the burden on the rest of the team. Protecting the team by restoring the balance between workload and work capacity is an important responsibility of the supervisor.

The group of zero-absentees must not be left out this process. Their actions in keeping good health, applying and expanding adjustment latitude and their view on team norms, is important for supervisors and may contribute to sickness absence management and team well-being.

It is recommended to perform this 'mapping' procedure in a cooperation between the supervisor, the personnel officer and the OP on an annual basis. Examples like other options of leave and adjustment of the labor-contract have to be discussed.

For these topics it is recommended to involve the human resources advisor. Judging factors that counteract work-attendance or may be unhealthy in the long run is the concern of the OP. It is also profitable to look into the possibilities to analyze and improve employees' positive psychological capacities and coping. To this purpose, referral to specific interventions is advised.

### Teams norms and influence

The team culture obviously impacts on employee behaviour through behavioural norms. Derived from Uttal's [76] definition of organizational culture, a team culture is as a system of shared values (what is important) and beliefs (how things work) that interact with team members, organizational structures, and control systems to produce behavioral team norms. A focus on team influence may further improve sickness absence management. Recommended is to implement a team norm that facilitates work attendance, well-being and adjustment latitude. For example, making teams responsible for finding and providing transitional duties and taking care of essential prerequisites to continue working or return to work. It has been shown that collaboration and participation are empowering working conditions that are fundamental for creating healthy nursing work environments [77].

The development of a team's psychological capital may be another way to improve sickness absence management. Aiming for a collective sense of psychological capital in a team improves an individual's absenteeism behaviour [36]. West et al. [50] suggested that training of team capacities might provide unique benefits in outcome over and above individual level training. Especially when the training can be conducted for individuals while operating as a team. In healthcare, collective team training is widely used and organizations can include such a training in their development program.

Promoting teams spirit is another promising issue to affect sickness absence behaviour. It has been reported that supportive team cultures improve employee commitment, satisfaction, and cohesion [78]. Enlargement of these work attitudinal determinants by creating a coherent team are an expected advantage of teams in healthcare. Supervisors have to be aware of probable pitfalls of this team coherence. For instance, they should guard employees who separate from the team or do not fit the team, since the motivation of such employees to attend work can decline and encourage sickness absence. A supportive culture is characterized by a high humane orientation and low assertiveness [79]. Humane orientation refers to whether individuals are concerned about others, friendly and generous towards others, and tolerant of mistakes, instead of people being dominant, assertive and tough [80].

## Future research

- Specific interventions studies on improving positive psychological capacities of teams and individuals are needed. It would be interesting to investigate how employees during their work career can actively grow in these capacities.
- Interventions, on analyzing and influencing team norms and cultures towards work attendance instead of work absence, are necessary. Perhaps an adequate team norm could lead to a bigger span of control for supervisors without losing quality of sickness absence management.
- A specific intervention study is required to gain more knowledge in how to improve effective leadership of supervisors with regard to sickness absence management. Adequate analysis of the readiness level of an employee who is confronted with illness, stress and disabilities is crucial to choose the leadership style to appropriately address the employee and influence his/her sickness absence behaviour.
- Furthermore, occupational physicians need instruments and training to appraise an employee's readiness to return to work more consistently and reliably. This may improve recommendations to both employees and their supervisors in how to proceed in the return to work process.
- It would be interesting to find out how long-term zero-absentees can influence colleagues and empower positive psychological capacities in their team. Such research may provide opportunities of teams to collaborate with their supervisors rather than awaiting a supervisor's decision on sickness absence and understaffing of the team.

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# Summary



## SUMMARY

High levels of sickness absence predict future health outcomes, early retirement, and mortality. For that reason sickness absence is seen as a major public health problem and sickness absence research is a top priority in Europe. However, sickness absence is not only a medical problem. A complex mixture of legislation, processes, stakeholders and circumstances influence an individual's decision to call in sick, stay at work or return to work.

Short-term sickness absence is often considered to be of little importance, because it is not as costly as long-term sickness absence. However, frequent short-term sickness absences results in understaffing and interferes with work processes. Furthermore employees with frequent short-term sickness absences are at increased risk of future long-term absence. Given the association with behavioural attitudes and future long-term sickness absence, more attention should be paid to the sickness absence frequency as an important signal.

Some employees seldom call in sick, though they face the same difficulties in work, are managed by the same supervisors and are subject to the same organizational policies and practices. These zero-absentees are usually unnoticed in companies in that they do not get the attention or respect they need when companies are struggling to manage sickness absence.

This thesis focuses especially on short-term sickness absence and zero-absenteeism and the management of these types of sickness absence. Different models and theories are used as framework to explain sickness absence behaviour and analyze practical implications. The situational leadership theory of Hersey & Blanchard serves as an important theoretical framework to investigate effective management of sickness absence behaviour.

In the Netherlands, legislation and Collective Labour Agreements are important guidelines for sickness absence policies and practices. The research is performed in Nij Smellinghe Hospital, (Drachten, the Netherlands). In this hospital the management of sickness absence is an important part of the organizational policies and practices. The hospital restricts sickness absence to personal illnesses and provides other types of leaves for reasons, such as care for family members. The supervisor manages sickness absence and receives support and advice from the human resource manager (HRM) and occupational physician (OP). Frequent absenteeism is one of the major issues in their management of sickness absence. Over the years, sickness absence levels have declined and the numbers of employees without sickness absence have increased. As a result, the hospital was reported to have the lowest sickness absence rates in the hospital care sector in 2010 by Vernet, market leader in benchmark for healthcare in the Netherlands.

Chapter 1 describes the current state-of-the-art in sickness absence research and a number of theoretical models that are used as frameworks in the thesis are discussed. The research questions in this thesis are introduced, and background information about the study population is provided. The overall aim of the thesis was to study sickness absence behaviour and managerial leadership in relation to sickness absence, with special attention for the frequency, i.e. the number of episodes of sickness absence, and for zero-absenteeism.

Chapter 2 describes a cross-sectional study in which health and work perceptions were investigated in relation to the frequency of sickness absence, distinguishing between short (1-7 days) and long (>7 days) episodes of sickness absence. Short episodes were less frequently seen in older employees and in employees who perceived better health. Mental health seemed to have no relation with frequency of sickness absence. Perceived work characteristics were not associated with the frequency of sickness absence. Sickness absence was more frequent in employees with a high number of work hours per week. Also problem-solving coping was positively associated with the frequency of sickness absence. Therefore, the OP should not only discuss the health status with employees who are frequently absent, but should also inquire about the double load of work and family care. Employees who perceive stress may be more likely to solve the burden of double load by taking sick leave.

The cross-sectional study in chapter 3 further investigates the frequency of short-term sickness absence in relation to health and work factors. Frequent short-term sickness absence was seen more often when employees perceived high work efforts and low rewards for the work they perform. Alternatively, employees who perceived high job demands and low job control had fewer sick days and fewer short-term absences possibly because felt responsible for the people depending on their care. Employees with lower scores on commitment had more short-term sickness absence episodes. Obviously, frequent absentees seem to find it less difficult to withdraw from work obligations. These findings implicate that the OP should not only look for signs of chronic disease but also inquire about work efforts and rewards and work-related well-being when employees are frequently sickness absent. Managers may discuss the work efforts and rewards with frequent absentees and support them by trying to relieve work efforts and/or increase rewards.

Chapter 4 describes the results of a comparative study between Norwegian and Dutch nurses. We investigated coping styles in relation to the health status and work environment. Passive coping, which is an emotion-focused coping strategy, was associated with poor general health and poor mental health in as well Norwegian and Dutch nurses. Passive coping was also related to low job control (i.e. poor participation) and job support (i.e. poor collaboration). It is important for nurse managers to recognize passive coping strategies, such as avoiding problems and waiting to see what happens, because this type of coping may indicate poor health and/or the fact that work conditions overwhelming control over work. The

findings also emphasize the importance of good collaboration and participation in nursing teams, which may help nurse managers and others to consider strategies for the improvement of work environment to foster more positive outcomes for both nurses and patients.

Chapter 5 focuses on the prospective relationship between coping styles and sickness absence in healthcare. Self-rated coping styles at baseline were linked with the number of episodes of sickness absence during 1-year follow-up. Problem-solving coping styles, i.e. looking for opportunities to solve a problem, and social coping styles, i.e. seeking social support in solving a problem, were associated with fewer sickness absence episodes. Palliative avoidant coping, i.e. the belief that a stressful event must be endured rather than be controlled, was not associated with the number of sickness absence episodes. In the literature, contrasting associations between sickness absence and palliative coping versus avoidant coping were reported, possibly due to different definitions of palliative and avoidant coping styles. In our study, palliative and avoidant coping were analyzed as one construct, which may explain why we failed to find a relationship with sickness absence. Problem-solving coping was associated with fewer episodes of long-term sickness absence. Nurse managers can use this knowledge to stimulate problem-solving coping in their nursing teams. Social coping was associated with less short-term sickness absence and, possibly, managers could reduce short-term absence by stimulating social coping skills within their nursing teams. Further research on the impact of palliative avoidant coping is needed to investigate the impact of this coping strategy on sickness absence in healthcare.

Chapter 6 describes a study on the agreement between OP ratings of an employee's readiness to return to work (RRTW). The readiness of an employee is an important part of his sickness absence behaviour. The inter-OP agreement on intuitively rated RRTW showed a wide variability. This finding accentuated the need for instruments for OPs to establish an employee's RRTW and for training OPs in giving well founded return to work recommendations. Knowledge about an employee's RRTW is also important for managers, so they know how to support and instruct sick-listed employee's in the return to work process.

Chapter 7 describes a cross-sectional study that investigated the relationship between managerial leadership and sickness absence in healthcare. Nurse managers' leadership styles were associated with registered sickness absence among their nursing staff. The number of sickness absence days and the number of short-term sickness absence episodes were found to be cross-sectionally linked to the leadership style. Short-term sickness absence was less frequent in wards with nurse managers with a relationship-oriented style than with a task-oriented style. We advised to train managers in relationship-oriented styles, since this may reduce sickness absence and improve nurse staffing and quality. Further longitudinal research has to reveal the effects of management changes and management training

on staff productivity and sickness absence levels. Organizations may consider assessing the preferred leadership styles of new nurse managers.

Chapter 8 further investigates the leadership behaviour of nurse managers in relation to sickness absence of nursing staff in a cross-sectional pilot study. The flexibility of nurse managers, i.e. the degree to which leaders can adapt their leadership style, was not associated with sickness absence. High leadership effectiveness, i.e. using the leadership style appropriate to a given situation or readiness of an employee, was related to fewer days and fewer short episodes of sickness absence. Leadership effectiveness explained only 14% of the variance in short episodes of sickness absence, indicating that other factors may also be important with regard to sickness absence in the nursing workforce. Future longitudinal research is recommended to reveal the effects of nursing leadership effectiveness on nurses' sickness absence. Such research should also include the number of employees supervised by the manager.

Chapter 9 describes a study of leadership effectiveness in relation to staff sickness absence in a controlled before – after design. When a ward obtained a more effective manager, the proportion of employees without sickness absence increased. Leadership effectiveness was not associated with the number of sickness absence days in short-term (1-7 days) episodes. The number of sickness absence days in medium-term (8-42 days) and long-term (>42 days) episodes decreased when wards obtained a more effective manager and increased in wards that got a less effective manager, though the number of long-term sickness absence episodes was too low for statistical significance. It was concluded that effective managers might be more successful in changing sickness absence behaviour by persuading sick-listed employees to perform adjusted work tasks or transitional duties and may facilitate return to work.

Chapter 10 is a qualitative study that describes the characteristics of zero-absentees investigated by interviews and focus groups. Zero absentees reported no sickness presenteeism, i.e. they did not judge that they had better stayed at home when experiencing health complaints. Zero-absentees creatively invented ways to achieve work attendance. Their search for opportunities to attend work was driven by intrinsic motivation, upbringing and personal norms and beliefs. External motivation, like managerial leadership, seemed not important for sickness absence behaviour of zero-absentees. Zero-absentees could be an example for their colleagues and be an important source for team norms and beliefs about sickness absence.

Chapter 11 presents a second qualitative study focusing on the actual and potential influence of zero-absentees on sickness absence in teams and organizations. Zero-absentees possess positive psychological capacities and were found to be high on resilience, self-efficacy, hope and optimism, which helped them to attend work. This construct is also known as psychological capital (PsyCap). PsyCap can be applied to develop and improve team and employee performance, for instance

by encouraging zero-absentees to discuss team behaviour openly. Supervisors can motivate zero-absentees to empower colleagues towards more positive psychological states and positive team behaviour, which may reduce sickness absence rates. Organizations can work towards a more pro-active personnel management by engaging zero-absentees in the development and adjustment of organizational policies and practices.

In chapter 12 the most important findings of the aforementioned studies are discussed in the context of the methodological strengths and limitations of the various studies. The findings provide knowledge and tools to improve sickness absence management.

This dissertation shows how important it is to know what influences an employee's decision whether or not to report sick. Managing sickness absence needs a targeted and tailor-made approach per employee in which, not only the employee, the supervisor and the OP have an important role, but also the team in which an employee works. The results of this thesis also warrant more attention to short-term sickness absence, zero-absence, and PsyCap.



# Samenvatting



## SAMENVATTING

Hoog ziekteverzuim voorspelt toekomstige uitkomsten voor gezondheid, vervroegde uittreding uit werk en mortaliteit. Ziekteverzuim wordt daarom gezien als een belangrijk probleem in de publieke gezondheidszorg. Onderzoek naar ziekteverzuim heeft dan ook een top prioriteit in wetenschappelijk onderzoek binnen Europa. Toch is ziekteverzuim niet alleen een medisch probleem. Een complexe mix van wetgeving, beïnvloedende processen, betrokkenen en omstandigheden dragen bij aan de individuele beslissing om bij klachten ziek te melden, aan het werk te blijven of terug te keren naar het werk.

Kortdurend verzuim wordt vaak gezien als minder belangrijk dan langdurig verzuim, vanwege de lagere kosten. Echter, kortdurend ziekteverzuim beïnvloedt direct het werkproces en leidt tot onderbezetting. Verder lopen werknemers met frequent kort verzuim het risico op toekomstig langdurig verzuim. Dit maakt dat, uitgaande van de relatie met gedrag en toekomstig langdurig verzuim, meer aandacht geschonken zou moeten worden aan frequentie van verzuim als een belangrijk signaal.

Sommige werknemers melden zich echter nooit ziek, hoewel ze dezelfde problemen in het werk tegenkomen, aangestuurd worden door dezelfde leidinggevenden en vallen onder hetzelfde organisatiebeleid. Deze nulverzuimers worden meestal niet opgemerkt in organisaties en dus zonder de aandacht en de waardering die ze verdienen, terwijl tegelijkertijd bedrijven veel moeite doen om het ziekteverzuim te managen.

Dit proefschrift richt zich op kortdurend verzuim en nulverzuim, en het managen van dit type verzuim. Verschillende modellen en theorieën worden als basis gebruikt voor de verklaring van ziekteverzuimgedrag en het analyseren van praktische toepassingen. Het situationele leiderschap van Hersey and Blanchard dient als belangrijk theoretisch raamwerk voor het onderzoek naar management van ziekteverzuimgedrag.

In Nederland zorgen wetgeving en collectieve arbeids overeenkomsten (CAO's) voor belangrijke richtlijnen voor ziekteverzuimbeleid. Het onderhavige onderzoek is verricht in Ziekenhuis Nij Smellinghe te Drachten. In dit ziekenhuis vormt het managen van ziekteverzuim een belangrijk onderdeel van het organisatiebeleid. De leidinggevende is degene die stuurt op ziekteverzuim met ondersteuning en advies van de afdeling personeelszaken (P&O). Frequent verzuim is een belangrijk onderwerp in de aanpak van ziekteverzuim. In de loop der jaren zijn de ziekteverzuimcijfers gedaald en is het aantal werknemers zonder ziekteverzuim toegenomen. Het resultaat hiervan was het behalen van de laagste verzuimcijfers in 2010 voor de branche Algemene Ziekenhuizen, gemeten door Vernet, de marktleider in benchmark voor de gezondheidszorg in Nederland.

Hoofdstuk 1 beschrijft de huidige stand van zaken in het onderzoek naar ziekteverzuim. Enkele theoretische modellen worden besproken, welke als raamwerk zijn gebruikt in dit proefschrift. De onderzoeksvragen van dit proefschrift worden geïntroduceerd en achtergrondinformatie wordt gegeven over de onderzoekspopulatie. De algemene doelstelling van dit proefschrift is het bestuderen van ziekteverzuimgedrag en leiderschap in relatie tot ziekteverzuim, met speciale aandacht voor frequentie van verzuim en specifiek voor nul-verzuim.

Hoofdstuk 2 beschrijft een cross-sectionele studie waarin gezondheid en werkbeleving worden onderzocht in relatie tot verzuimfrequentie, opgesplitst in korte (1-7 dagen) en lange (>7 dagen) episoden van ziekteverzuim. Korte episoden werden minder vaak gezien bij oudere werknemers en bij werknemers die zich gezonder voelen. Mentale gezondheid bleek geen relatie te hebben met de verzuimfrequentie. Ook de werkbeleving had geen relatie met de frequentie van verzuim. Ziekteverzuim kwam vaker voor bij werknemers met een groot aantal gewerkte uren in de voorafgaande periode. Daarnaast was probleemoplossende coping positief gerelateerd aan de frequentie van verzuim. De bedrijfsarts zou daarom met een frequent verzuimer niet alleen de gezondheidstoestand van de werknemer moeten bespreken, maar ook moeten informeren naar de dubbele belasting van werk en de zorg voor het gezin. Werknemers, die stress ondervinden, lijken hun problemen van dubbele belasting op te lossen door zich ziek te melden.

De cross-sectionele studie in hoofdstuk 3 doet nader onderzoek naar de frequentie van kortdurend ziekteverzuim in relatie tot gezondheid en werkfactoren. Wanneer de te leveren inspanning als hoger werd ervaren dan de verkregen waardering voor het geleverde werk werd meer frequent kort verzuim gezien. Echter, een ervaren hogere werkdruk dan de ervaren controle over het werk gaf juist minder ziektedagen en minder kortdurend verzuim, waarschijnlijk doordat verpleegkundigen zich verantwoordelijk voelen voor de patiënten die afhankelijk zijn van hun zorg. Werknemers met een lagere score op "committent" hadden meer kortdurende ziekteverzuim perioden. Blijkbaar vinden frequent verzuimers het minder moeilijk zich aan het werk te onttrekken. De bevindingen impliceren dat de bedrijfsarts zich niet alleen zou moeten richten op signalen van chronische ziekten, maar ook moeten informeren naar werkdruk en werkgerelateerd welbevinden wanneer werknemers frequent ziekteverzuim hebben. Managers zouden werkdruk en waardering moeten bespreken met frequent verzuimers en hen ondersteunen bij het verlichten van de werkdruk en/of het vergroten van de waardering.

Hoofdstuk 4 beschrijft de resultaten van een vergelijkende studie tussen Noorse en Nederlands verpleegkundigen. We onderzochten copingstijlen en hun relatie met de ervaren gezondheid en arbeidsomstandigheden. Passieve coping, een vorm van een emotie gerichte coping strategie, was gerelateerd aan een lage gezondheid evenals een lage mentale gezondheid, zowel in de Noorse als in de Nederlands groep verpleegkundigen. Passieve coping was eveneens gerelateerd aan een lagere job

control, en een lage job support. Het is belangrijk voor zorgmanagers een passieve coping te herkennen, zoals ontwijken van problemen en afwachten op wat gebeuren gaat, omdat dit type van coping kan duiden op een slechte gezondheid en/of dat arbeidsomstandigheden de werkcondities belemmeren. De bevindingen benadrukken het belang van goede samenwerking en participatie binnen verpleegkundige teams. Dit kan de zorgmanagers en bedrijven helpen anderen strategieën te overwegen ter verbetering van de arbeidsomstandigheden en aldus meer positieve uitkomsten genereren voor zowel verpleegkundigen als patiënten.

Hoofdstuk 5 richt zich op de prospectieve relatie tussen coping stijlen en ziekteverzuim in ziekenhuizen. Als uitgangspunt werden zelfgescoorde coping stijlen genomen en gelinked aan het aantal episoden van kort frequent verzuim gedurende 1 jaar follow-up. Probleemoplossende copingstijlen, zoals het zoeken naar mogelijkheden om een probleem op te lossen, en sociale coping stijlen, zoals het zoeken naar sociale support bij het oplossen van een probleem, waren gerelateerd aan een lagere score voor ziekteverzuim episoden. Palliatieve ontwijkende coping, zoals het geloof dat een stressvolle gebeurtenis moet worden doorstaan in plaats van gecontroleerd, had geen relatie met het aantal episoden van ziekteverzuim. In de literatuur wordt echter gerapporteerd over tegengestelde relaties tussen het aantal ziekteverzuimperioodes en palliatieve versus ontwijkende coping. Waarschijnlijk worden deze tegengestelde bevindingen veroorzaakt door verschillende definities van palliatieve en ontwijkende coping stijlen. In onze studie werden palliatieve en ontwijkende coping geanalyseerd als één en hetzelfde construct en dit zou kunnen verklaren waarom wij geen relatie met ziekteverzuim vonden. Probleemoplossende coping was gerelateerd aan minder episoden van langdurig ziekteverzuim. Zorgmanagers kunnen deze kennis gebruiken door probleem oplossende coping te stimuleren in hun verpleegkundige teams. Sociale coping was geassocieerd met minder kortdurend ziekteverzuim. Het verhogen van sociale “coping skills” zou kortdurend ziekteverzuim kunnen reduceren en geeft daarmee een interventiemogelijkheid voor zorgmanagers. Verder onderzoek naar de impact van palliatieve ontwijkende coping is nodig voor het onderzoeken naar de invloed van deze coping strategie op ziekteverzuim in de zorg.

Hoofdstuk 6 beschrijft een studie naar de overeenstemming tussen bedrijfsartsen van beoordeling over de “readiness” van werknemers terug te keren in het werk. In de literatuur wordt gesproken over “Readiness to Return to Work” of RRTW, de mate waarin een werknemer bereid en in staat is terug te keren in werk. De “readiness” van een werknemer is een belangrijk onderdeel van zijn ziekteverzuimgedrag. De overeenstemming tussen bedrijfsartsen op het intuïtief gescoorde RRTW toonde een brede variatie. De bevindingen accentueren de noodzaak van een instrument voor bedrijfsartsen ter vaststelling van de RRTW en het kunnen geven van goed gefundeerde adviezen over de terugkeer naar werk. Kennis van de RRTW van werknemers is ook belangrijk voor managers, zodat ze weten hoe de ziek gemelde werknemers te ondersteunen en de hoe deze te begeleiden bij terugkeer naar werk.

Hoofdstuk 7 beschrijft een cross-sectionele studie waarin de relatie wordt onderzocht tussen leiderschapstijlen en ziekteverzuim in de zorg. De leiderschapstijlen van zorgmanagers waren geassocieerd met geregistreerd ziekteverzuim binnen hun verpleegkundig team. Het aantal ziekteverzuimdagen en het aantal episoden met kortdurend ziekteverzuim bleken gerelateerd aan de leiderschapstijl. Kortdurend ziekteverzuim bleek minder vaak voor te komen op afdelingen met leidinggevendenden met een relatiegerichte stijl van leidinggeven. We adviseren daarom zorgmanagers te trainen in deze relatiegerichte leiderschapstijl, omdat dit het ziekte verzuim kan reduceren en de bezetting en kwaliteiten van de verpleegkundigen kan vergroten. Verder longitudinaal onderzoek zal uit moeten wijzen wat de effecten zijn van wijzigingen in management en training van management op het beïnvloeden van de productiviteit van hun staf en het nivo van het ziekteverzuim. Bedrijven zouden kunnen overwegen bij het aannamebeleid te sturen op leidinggevendenden met de gewenste leiderschapstijl.

Hoofdstuk 8 onderzoekt het gedrag van zorgmanagers in relatie tot ziekteverzuim van verpleegkundigen in een cross-sectionele pilot studie. De flexibiliteit in leiderschapstijlen van zorgmanagers, dus de mate waarin leidinggevendenden beschikken over verschillende leiderschapstijlen, was niet geassocieerd met ziekteverzuim. Een hoge mate van effectiviteit van leiderschap, zoals toepassen van de passende leiderschapstijl bij de gegeven situatie of readiness van een werknemer, was wel van invloed en was gerelateerd aan minder verzuimdagen en minder periodes met kort ziekteverzuim. Effectiviteit van leiderschap verklaarde echter maar 14% van de variantie in korte episoden van ziekteverzuim, hetgeen indiceert dat ook andere factoren van belang zijn bij ziekteverzuim onder verpleegkundigen. Verder longitudinaal onderzoek wordt geadviseerd om aan te tonen wat de effecten zijn van effectiviteit van zorgmanagers op het ziekteverzuim van verpleegkundigen. Dit onderzoek zou zich daarnaast moeten richten op de invloed van het aantal werknemers dat wordt aangestuurd door zorgmanagers.

Hoofdstuk 9 beschrijft een gecontroleerde vooraf en achteraf studie naar effectief leiderschap in relatie tot ziekteverzuim bij een reorganisatie van het management. Wanneer een afdeling een meer effectieve manager kreeg steeg het aantal werknemers zonder ziekteverzuim. Effectiviteit van leiderschap was niet geassocieerd met het aantal ziekteverzuimdagen in kortdurende verzuim episoden (1-7 dagen). Het aantal verzuimdagen in middellange (8-42 dagen) en lange (>42 dagen) verzuim episoden daalde wanneer afdelingen een meer effectieve manager kregen en steeg in afdelingen waar een minder effectieve manager werd aangesteld. De score voor de langdurige ziekteverzuim episoden was niet significant, mogelijk vanwege het (te) lage aantal werknemers met langdurig verzuim episoden. Concluderend zijn effectieve managers meer succesvol in het veranderen van ziekteverzuim gedrag door het overtuigen van verzuimende werknemers om aangepaste of vervangende taken uit te voeren en het faciliteren van terugkeer in werk.

Hoofdstuk 10 vormt het onderwerp van een kwalitatieve studie, die de kenmerken beschrijft van nulverzuimers, onderzocht middels interviews en focusgroepen. Nulverzuimers rapporteerden geen “sickness-presenteeism”, ze beoordeelden achteraf niet dat ze beter thuis hadden kunnen blijven bij het ondervinden van gezondheidsklachten. Nulverzuimers vinden op een creatieve manier wegen om het werk te blijven uitvoeren. Hun zoektocht naar mogelijkheden om het werk te blijven uitvoeren bleek gedreven door intrinsieke motivatie, opvoeding en persoonlijke normen en waarden. Externe motivatie, zoals leiderschap, bleek niet belangrijk voor ziekteverzuim gedrag van nulverzuimers. Nulverzuimers kunnen een voorbeeld zijn voor hun collega’s en kunnen een belangrijke bron zijn voor teamnormen en waarden rond ziekteverzuim.

Hoofdstuk 11 presenteert een tweede kwalitatieve studie gericht op de actuele en potentiële invloed van nulverzuimers op ziekteverzuim in teams en organisaties. Nulverzuimers bezitten positieve psychologische capaciteiten en bleken hoog te scoren op veerkracht, self-efficacy, vastberadenheid en optimisme, wat hen hielp het werk uit te voeren. Deze combinatie is ook wel bekend als ‘Psychological Capital’ (PsyCap). PsyCap kan aangewend worden voor het ontwikkelen en verbeteren van team- en werknemers productiviteit, bijvoorbeeld door het motiveren van nulverzuimers het teamgedrag openlijk te bespreken. Leidinggevenden kunnen nulverzuimers motiveren om collega’s het team te helpen zich te ontwikkelen in de richting van een meer positief psychologisch nivo en daarmee het ziekteverzuimgedrag beïnvloeden. Bedrijven wordt geadviseerd zich te richten op een meer pro-actief personeelsmanagement door het betrekken van nulverzuimers in het ontwikkelen en aanpassen van bedrijfsbeleid.

In hoofdstuk 12 worden de meest belangrijke bevindingen van alle studies besproken, evenals de methodologische sterktes en zwaktes. De bevindingen leveren extra kennis over ziekteverzuim management en geven praktische hulpmiddelen ter verbetering hiervan. We concluderen dat het belangrijk is te weten wat de keuze van een werknemer beïnvloedt bij het wel of niet ziekmelden. Het managen van ziekteverzuim vraagt een doelgerichte aanpak met maatwerk per werknemer. Daarin spelen niet alleen de werknemer, de leidinggevende en de bedrijfsarts een belangrijke rol, maar ook het team waarin de werknemer werkt. De resultaten van dit proefschrift rechtvaardigen meer aandacht voor kortdurend ziekteverzuim, nulverzuim en “Psychological Capital”.



# Dankwoord



Veel dank ben ik verschuldigd aan mijn promotores prof. dr Johan Groothoff en prof. dr Jac van der Klink, en mijn co-promotor dr Corné Roelen voor hun begeleiding. Hun kritische blik, enthousiasme en betrokkenheid waren motiverend en ondersteunend.

Johan, je bent een man met een tomeloze inzet en positieve uitstraling. Je bent het voorbeeld van het over kunnen dragen van positieve psychologische capaciteiten aan anderen. Had het Nederlandse voetbal team maar een coach gehad zoals jij.

Jac, mijn dank voor met name het delen van je kennis over leiderschap en kwalitatief onderzoek. Ook voor het gebruik mogen maken van je kamer voor ons promo-overleg ben ik je erkentelijk, ondanks de overvolle overlegtafel. Voor jou geldt: 'Een man met een chaotisch bureau herbergt een georganiseerde geest'.

Corné, je taakgericht leiderschap scoort een 'uitmuntend'. Je zou Corné niet zijn zonder kritisch commentaar. Met af en toe een zweem van ergernis over 'paarden-Engels', 'Frisismen' en een teveel aan praktische conclusies wist je artikelen toch weer om te vormen tot een wetenschappelijk leesbaar en verantwoord geheel.

Ook Lida op't Ende wil ik bedanken voor haar bijdrage. Wellicht ouderwets, maar de correcties per brief thuisgestuurd krijgen heeft toch altijd meer dan per mail.

Ziekenhuis Nij Smellinghe wil ik bedanken voor hun hulp. Niet alleen alle medewerkers die de tijd namen de vragenlijsten in te vullen of de interviews te ondergaan, de leidinggevenden die ondersteunden bij de goede respons, maar met name de mensen van personeelszaken, Ido Til, Madeleine Busch, Gretha Homma, Limmie Akse, Dianne Jongsma en Nely van Zweeden.

Ido, mijn dank voor je inzet om uit de ziekenhuisdata steeds weer mijn bestanden te verzamelen. Je vond altijd weer een oplossing voor een soms onmogelijke vraag.

Madeleine, Gretha en Limmie, mijn dank voor de hulp bij het uitzetten en verzamelen van de gegevens. Ondanks dat jullie het al zo druk hadden vonden jullie steeds de ruimte om toch de zaken op tijd klaar te hebben.

Dianne en Nely, mijn dank voor jullie meedenken en het vertalen naar, en in de praktijk brengen van de uitkomsten. Er is niets leukers dan het resultaat van soms taaie wetenschap ten uitvoer te brengen binnen een club als Nij Smellinghe.

Ook de directie van ArboNed en de collega's wil ik bedanken voor het feit dat ze me in de gelegenheid hebben gesteld tijd te besteden aan de eerste onderzoeken en de stappen op het gewaagde pad van een promotie.

De collega's en mensen in de 'back-office' wil ik bedanken voor hun inzet en praktische ondersteuning, Ciska Moedt, Steyn du Plessis, Danie en Marlies Botes, Johan Schreuder, Jeep Schreuder en Sybren Minkema.

Ciska, je praktische inzicht en je daadkrachtige Groningse insteek (met een overduidelijk inbreng van Friese nuchterheid) was bijzonder prettig. Ik weet niet of je ooit naar Friesland verhuist, maar je bent welkom.

Steyn, Danie en Marlies, jullie hulp als 'native English speakers' was een welkome aanvulling aan het internet, daar waar dit niet werkte in Zuid-Afrika. Steyn, mijn dank voor de check van mijn artikelen. Ongewild ben je nu ook op de hoogte van verzuimmanagement 'van die Hollanders'.

Johan, je snelheid van begrip en praktische insteek maken het 'afmaken' van de klus een 'makje'. Je introductie in arbo-land was eveneens snel en praktisch. Ik hoop dat je hierin net zoveel plezier beleeft als wij en dat dit leidt tot een vruchtbare samenwerking.

Jeep, dank voor je inzet in drukke tijden, zodat ik af en toe even de tijd kon nemen voor het schrijven. Wellicht ben jij de volgende promovendus. Ik neem daarvoor met plezier af en toe je werk over.

Sybren, mijn dank voor je begrip en steun. Voor alle keren dat je moest autorijden omdat ik mijn laptop mee had, je alleen de sociale plicht moest vervullen en je ondanks je blessure toch mijn deel van het 'paardenwerk' moest doen. Je bijdrage aan dit proefschrift is daarmee groot geweest.

Als laatste mijn dank aan mijn ouders, die beiden hebben gezorgd voor de 'finishing touch' op alle denkbare gebieden en momenten.





# Curriculum vitae



## CURRICULUM VITAE

Jolanda Schreuder werd op 19 januari 1966 geboren te Noord-Scharwoude. Na het Atheneum aan de scholengemeenschap Oostergo te Dokkum, studeerde zij Geneeskunde aan de Rijksuniversiteit Groningen. Zij studeerde daar af in 1994. Van 2001-2005 deed zij haar specialisatie Bedrijfsgeneeskunde aan de NSPOH te Amsterdam. Van 2001 tot 2010 is zij werkzaam geweest als bedrijfsarts bij ArboNed. In 2008 startte haar promotie-onderzoek bij de afdeling Sociale Geneeskunde aan de Rijksuniversiteit Groningen, Universitair Medisch Centrum Groningen. Dit onderzoek vond plaats binnen het ziekenhuis Nij Smellinghe te Drachten, waar Jolanda al vele jaren de vaste bedrijfsarts is voor de werknemers. Op basis van de resultaten van de verschillende deelonderzoeken is en wordt het verzuimbeleid binnen ziekenhuis Nij Smellinghe verder vormgegeven. Momenteel is Jolanda als bedrijfsarts werkzaam binnen een eigen onderneming, Schreuderarbo, samen met haar broer en bedrijfsarts, Jeep Schreuder. Bij Schreuderarbo is verzuimbeleid een kernactiviteit en dit onderzoek draagt dan ook bij aan het verder ontwikkelen van de dienstverlening.

Jolanda woont sinds 1996 samen (in Frieschepalen) met haar vriend, Sybren Minkema, waarmee ze haar grote passie deelt: het trainen en uitbrengen op concoursen van Friese paarden.



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