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A literature review on sick leave frequency determinants of the past decades

by

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Abstract

Objectives: A literature review on relevant sick leave frequency determinants during the past decades was performed.

Methods: The literature review referred to national and international studies on sick leave frequency determinants.

Results: During the past decades, in research literature, a broad range of sick leave frequency determinants was mentioned in a highly consistent pattern.

Conclusion: Over the past decades sick leave frequency was influenced by a broad range of similar determinants.

Keywords: review, sick leave frequency, determinants

Samenvatting

Doelstelling. Een literatuuronderzoek werd uitgevoerd naar determinanten van verzuimfrequentie die de afgelopen decennia van belang waren.

Methode. Het literatuuronderzoek betrof nationale en internationale studies over determinanten van verzuimfrequentie.

Resultaten. In de afgelopen decennia liet de onderzoeksliteratuur voor een breed spectrum van verzuimfrequentie determinanten een stabiel beeld zien.

Conclusie. In de afgelopen decennia werd verzuimfrequentie beïnvloed door een breed spectrum gelijkaardige determinanten.

Trefwoorden: literatuuronderzoek, verzuimfrequentie, determinanten

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Introduction

Sick leave is associated with numerous determinants and over the years extensive research, either national or international, has been performed to establish the precise character of these determinants. Studies on sick leave often distinguish between frequency and duration of sick leave. In this review we focus on determinants that give rise to sick leave, i.e. sick leave frequency determinants.

The research question is: For the past decades, according to literature, which sick leave frequency determinants were relevant?

Methods

The aim of the present literature review was to find out which sick leave frequency determinants were relevant during the past decades. Sick leave frequency indicates the number of sickness spells an employee takes a year. This number is influenced by determinants that refer to attitude towards absenteeism, the relation between health and working conditions and working relations and motivation. To identify the relevant sick leave frequency determinants over the past decades, apart from (inter)national scientific journals and academic theses, Medline was consulted.

This literature review focussed on determinants with a general and not a specific character. For instance, the habit of smoking was not detailed to the level of the number of cigarettes a person smokes a day and the duration in months or years of temporary appointments was not specified.

Keywords for the literature review on relevant determinants of sick leave frequency were: absenteeism, sickness absence, sickness spells, sick leave and sick leave frequency. Keywords for determinants of the work situation focussed on the working conditions, the work contents, working relations and the working circumstances. Other keywords referred to lifestyle like smoking and drinking alcohol or to individual characteristics and circumstances like age and gender, marital state and level of education. Keywords referring to the health status were: medical consumption (more specific: visits to the family doctor and frequently taking medicines), health complaints and perception of own health or perceived physical and mental health and perceived physical and mental workload.

Results

The literature review referred to a number of earlier Dutch studies on sick leave frequency determinants (1-6).

As for studies that focus on sick leave frequency determinants, personal well-being (1;7-10), individual factors (8;2-3;11;12-16) and atmosphere at the workplace (2;11;17-26) are regarded as important factors for sick leave frequency.

Sick leave frequency is related to determinants of the work situation i.e. work characteristics, categorised as 'working conditions', 'work contents', 'working relations' and 'working circumstances'.

In 'working conditions' job satisfaction prevails (the less satisfying job, the higher the sick leave frequency) (1;27-31), as do support (lesser support means a higher frequency) (1;19-20;32-34), and type of appointment (in case of a temporary appointment, sick leave frequency can be higher and lower) (1;4-6;27-35). In 'work contents' autonomy prevails (more autonomy means a lower sick leave frequency) (1;5;28;36-37) as do pace and pressure (the higher the pace and pressure, the higher the sick leave frequency) (1;3;32;34;38-41). In 'working relations' the relations with colleagues and supervisors are important (the poorer the relations, the higher the sick leave frequency) (3;25;34;42-45) as are inconvenient 'working circumstances' that lead to a higher sick leave frequency (the poorer the working circumstances in terms of air pollution and climate, the higher the sick leave frequency) (1;3;46-49).

As for health status: health complaints through physical and psychic perceived workload, are an expression of a poor health (the more the physical and psychic perceived workload, the higher the sick leave frequency) (1;16;38;50-54) as are mental problems (the more the mental problems, the higher the sick leave frequency) (29;55-58). Taking medicines means a higher sick leave frequency (1;59). As for motivation: less affinity with one's work leads to a higher sick leave frequency (1), the same is seen in case of a low working morale (8;34). As for individual characteristics and circumstances: with an increasing age sick leave frequency reduces (1;34;60-61); for women, a higher sick leave frequency is observed (1;3;28;62-64); married people show a lower sick leave frequency (3;47;65-66); the same applies for higher educated people (3-5). A relation was found between a high sick leave frequency and little balance between education and level of functioning (47;67). Finally, drinking (68-70) and smoking (71-73) are associated with higher sick leave frequency.

Figure 1 provides the results classified in accordance with the literature review.

For the direction of the influence of the mentioned sick leave frequency determinants on the basis of the literature review see Table 1.

FIGURE 1. Results of the literature review for sick leave frequency determinants (1984-2004)

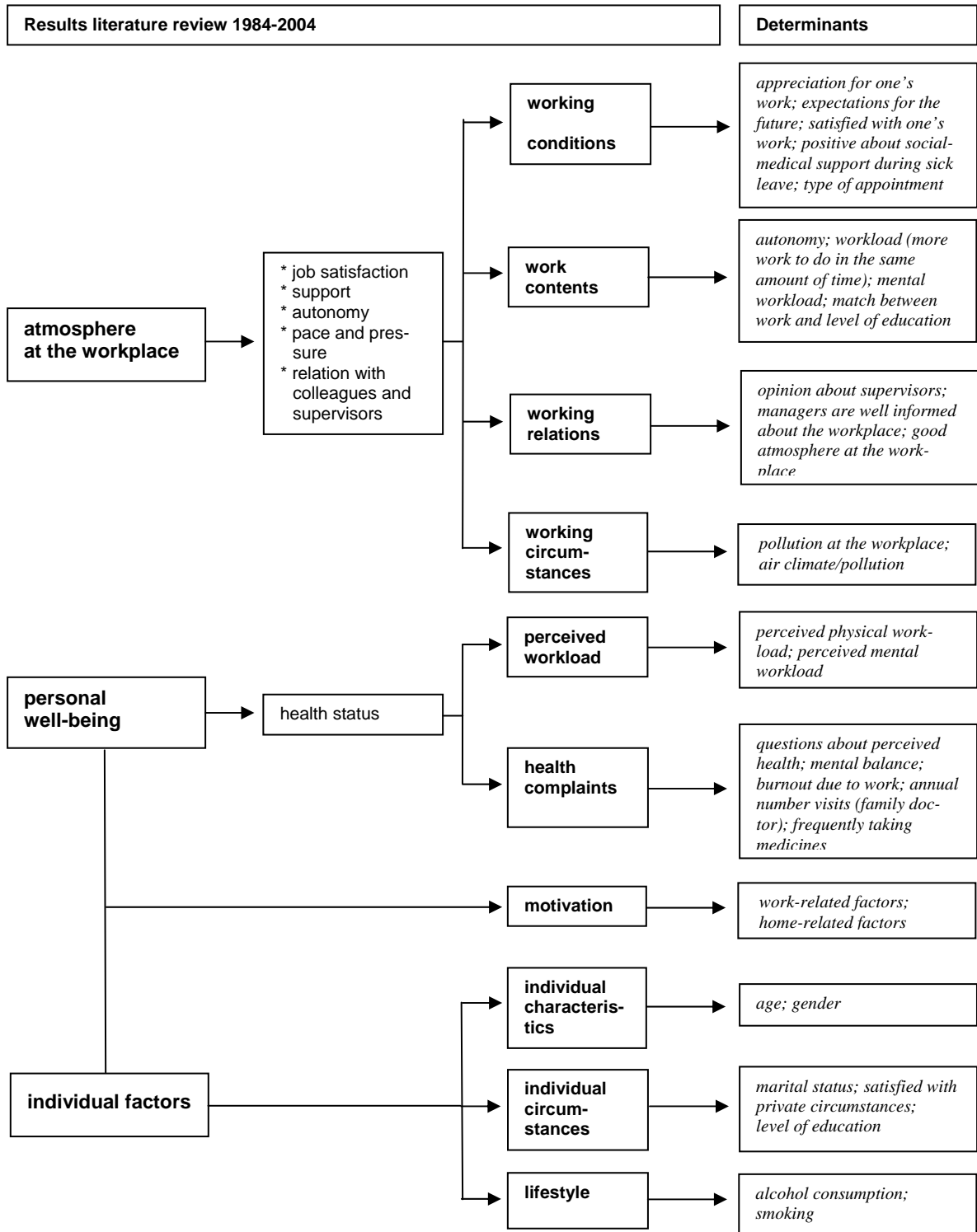


TABLE 1. Sick leave frequency determinants: the direction of the influence

SICK LEAVE FREQUENCY DETERMINANTS	DIRECTION OF THE INFLUENCE¹
WORKING CONDITIONS	
appreciation for one's work	more appreciation > lfsl
expectations for the future	better expectations > lfsl
satisfied with one's work	more satisfaction > lfsl
positive about social-medical support during sick leave	indifferent ²
type of appointment (<i>permanent or temporary</i>)	indifferent
WORK CONTENTS	
autonomy	more autonomy > lfsl
workload (more work in the same amount of time)	more work in the same amount of time > hfsl
mental workload	heavier mental workload > hfsl
match between work and level of education	better match > lfsl
WORKING RELATIONS	
opinion about supervisors	more positive opinion > lfsl
managers are well informed about the workplace	better informed > lfsl
good atmosphere at the workplace	better atmosphere > lfsl
WORKING CIRCUMSTANCES	
pollution at the workplace	more pollution > hfsl
air climate / pollution	bad air climate / more pollution > hfsl
HEALTH STATUS (perceived workload):	
perceived physical workload	perception of heavier physical workload > hfsl
perceived mental workload	perception of heavier mental workload > hfsl
HEALTH STATUS (health complaints):	
questions about perceived health	perception of a poorer health > hfsl
mental balance	the more out of balance > hfsl
burnout due to work	the more severe burnout > hfsl
annual number of visits (family doctor)	higher number of visits > hfsl
frequently taking medicines	more frequently taking medicines > hfsl
MOTIVATION	
work-related factors (working with pleasure)	working with more pleasure > lfsl
home-related factors (more or less motivated)	more motivated for work > lfsl
INDIVIDUAL CHARACTERISTICS AND CIRCUMSTANCES	
age	older > lfsl
gender	female > hfsl
marital status	married > lfsl
satisfied with private circumstances	more satisfied > lfsl
level of education (<i>high or low</i>)	higher level of education > lfsl
alcohol consumption	drinking more > hfsl
smoking	smoking more > hfsl

¹ Direction of the influence based on the literature review: the *assumed* effect on the frequency of sick leave (lfsl = lower frequency of sick leave; hfsl = higher frequency of sick leave).

² Indifferent: literature is scarce or ambiguous.

Discussion and conclusion

A literature review on sick leave frequency determinants during the past decades was performed. The aim was to find sick leave frequency related determinants and not to evaluate the size of the effect of those determinants. As for future studies, it would be useful that the relative effect of determinants is also taken into consideration.

After reviewing the literature we concluded that, during the last decades, a broad spectrum of determinants of sick leave frequency was mentioned in a highly consistent pattern. This conclusion was based on the finding that studies on sick leave frequency during the years 1984-2004 apparently focused on similar determinants.

References

1. Schalk M. Determinanten van veelvuldig kortdurend ziekteverzuim [Determinants of frequent sick leave]. The Hague 1989: Delwel.
2. Soeters J. Afwezigheid wegens ziekte in het herstructureringsgebied Zuid-Limburg [Absenteeism due to illness in the reform area South-Limburg]. Maastricht, University of Limburg, 1980: 147-57.
3. Smulders P. Balans van 30 jaar ziekteverzuimonderzoek; de resultaten van 318 studies samengevat [Balance of 30 years sickness absence research; the results of 318 summarized studies]. Leiden, 1984: NIPG/TNO.
4. Klein Hesselink D, Kruidenier H, Veerman T, et al. Afwezigheid verklaard. Literatuurstudie naar determinanten van ziekteverzuim en arbeidsongeschiktheid [Absenteeism explained. A literature search on determinants of sick leave and incapacity for work]. Amsterdam, 1993: NIA.
5. Nijhuis F, Soeters J. Werk en ziekte: een onderzoek naar afwezigheid wegens ziekte en arbeidsongeschiktheid bij 51 organisaties in Zuid-Limburg [Work and illness: a study of absenteeism because of illness and incapacity to work in 51 companies in South-Limburg]. Maastricht, 1982: Rijksuniversiteit Limburg.
6. Draaisma D, Smulders P. In: D.Draaisma and P.Smulders. Ziekteverzuim en het bedrijf [Absenteeism and the company]. Leiden, NIPG/TNO, 1978.
7. Hoverstad T, Kjolstad S. Use of focus groups to study absenteeism due to illness. *J Occup Med* 1991; 33(10): 1046-50.
8. Kentner M. Frequency of absenteeism -value and modification by work disability data. *Dtsch Gesundheitsw* 1991; 61(Special): 26-31.
9. Hornquist J, Zar M, Hansson B. Precursors of repeated short-term sick leave: an empiric review of some background, job and well-being characteristics. *Scand J Soc Med* 1993; 21(3): 164-70.
10. Reynolds S. Psychological well-being at work: is preventing better than cure? *J Psychosom Res* 1997; 43(1): 93-102.
11. Feeney A, North F, Head J, et al. Socioeconomic and sex differentials in reason for sickness absence from the Whitehall II Study. *Occup Environ Med* 1998; 55(2): 91-8.
12. Schröer C. Verzuim wegens overspanning. Een onderzoek naar de aard van overspanning, de hulpverlening en het verzuimbehoef [Absenteeism due to stress. A study of the character of stress, support and absenteeism]. University of Maastricht, 1993: 55-72.

13. Muller C, Monrad T, Biering-Sorensen F, et al. The influence of previous low back trouble, general health and working conditions on future sick-listing because of back trouble. A 15-year follow-up study of risk indicators for self-reported sick-listing caused by low back trouble. *Spine* 1999; 24(15): 1562-70.
14. Virtanen M, Kivimaki M, Elovainio M, et al. Contingent employment, health and sickness absence. *Scand J Work Environ Health* 2001; 27(6): 365-72.
15. Boedeker W. Associations between workload and diseases rarely occurring in sickness absence data. *J Occup Environ Med* 2001; 43(12): 1081-8.
16. IJzelenberg W, Molenaar D, Burdorf A. Different risk factors for musculoskeletal complaints and musculoskeletal sickness absence. *Scand J Work Environ Health* 2004; 30(1): 56-63.
17. Kaiser C. Het verzekeringsgeneeskundig handelen en de verzuimduur [Insurance medicine and the duration of sick leave]. Thesis, University of Maastricht, the Netherlands, 1992: 125-37.
18. Geurts S, Buunk B, Schaufeli W. Health complaints, social comparisons, and absenteeism. *Work & Stress* 1994; 8(3): 220-34.
19. Rael E, Stansfeld S, Shipley M, et al. Sickness absence in the Whitehall II study, London: the role of social support and material problems. *J Epidemiol Community Health* 1995; 49(5): 474-81.
20. North F, Syme S, Feeney A, et al. Psychosocial workenvironment and sickness absence among British civil servants: the Whitehall II study. *Am J Public Health* 1996; 86(3): 332-40.
21. Stansfield S, Fuhrer R, Head J, et al. Work and psychiatric disorder in the Whitehall II study. *J Psychosom Res* 1997; 43(1): 73-81.
22. Vahtera J, Kivimaki M, Koskenvuo M, et al. Hostility and registered sickness absences: a prospective study of municipal employees. *Psychol Med* 1997; 27(3): 693-701.
23. Kivimaki M, Elovainio M, Vahtera J. Workplace bullying and sickness absence in hospital staff. *Occup Environ Med* 2000; 57(10): 656-60.
24. Kivimaki M, Elovainio M, Vahtera J, et al. Organisational justice and health of employees: prospect cohort study. *Occup Environ Med* 2003; 60(1): 27-33.
25. Melchior M, Niedhammer I, Berkman L, et al. Do psychosocial work factors and social relations exert independent effects on sickness absence? A six year prospective study of the Gazel cohort. *J Epidemiol Community Health* 2003; 57(4): 285-93.
26. Eriksen W, Bruusgaard D, Knardahl S. Work factors as predictors of sickness absence: a three month prospective study of nurse's aides. *Occup Environ Med* 2004; 61(5): 398-404.
27. Leijon M, Mikaelsson B. Repeated short-term sick-leave as a possible symptom of psycho-social problems. *Scand J Soc Med* 1984; 12(4): 165-9.
28. North F, Syme S, Feeney A, et al. Explaining socioeconomic differences in sickness absence: the Whitehall II Study. *BMJ* 1993; 306(6874): 361-6.
29. Melamed S, Ben-Avi I, Luz J, et al. Objective and subjective work monotony: effects on job satisfaction, psychosocial distress, and absenteeism in blue-collar workers. *J Appl Psychol* 1995; 80(1): 29-42.
30. Frank E. Absenteeism: causes and cures. *Radiol Man* 1998; 20: 34-7.
31. Zboril-Benson L. Why nurses are calling in sick: the impact of health care restructuring. *Can J Nurs Res* 2002; 33(4): 89-107.
32. Moreau M, Valente F, Mak R, et al. Occupational stress and incidence of sick leave in the Belgian workforce: the Belstress study. *J Epidemiol Community Health* 2004; 58(6): 507-16.
33. Vaananen A, Toppinen-Tanner S, Kalimo R, et al. Job characteristics, physical and psychological symptoms and social support as antecedents of sickness absence among men and women in the private industrial sector. *Soc Sci Med* 2003; 57(5): 807-24.

34. Geurts S. Absenteeism from a social psychological perspective. Nijmegen, 1994: Katholieke Universiteit Nijmegen.
35. Virtanen M, Kivimaki M, Elovainio M, et al. From insecure to secure employment: changes in work, health, health related behaviours, and sickness absence. *Occup Environ Med* 2003; 60(11): 948-53.
36. Niedhammer I, Bugel I, Goldberg M, et al. Psychosocial factors at work and sickness absence in the Gazel cohort: a prospective study. *Occup Environ Med* 1998; 55(11): 735-41.
37. Ala-Mursala L, Vahtera J, Kivimaki M, et al. Employee control over working times: associations with subjective health and sickness absences. *J Epidemiol Community Health* 2002; 56(4): 244-5.
38. Heaney C, Clemans J. Occupational stress, physician-excused absences, and absences not excused by a physician. *Am J Health Promot* 1995; 10(2): 117-24.
39. Greiner B, Krause N, Ragland D, et al. Objective stress factors, accidents, and absenteeism in transit operators: a theoretical framework and empirical evidence. *J Occup Health Psychol* 1998; 10(2): 130-46.
40. Bourbonnais R, Mondor M. Job strain and sickness absence among nurses in the province of Quebec. *Am J Ind Med* 2001; 39(2): 134-202.
41. Otten F. *Werkstress en gezondheid [Workstress and healthiness]*. The Hague, 2001: Statistics Netherlands (CBS).
42. Buunk A, Janssen P. Sociale ondersteuning in de thuissituatie en psychosociale stress op het werk [Social support at home and psychosocial stress at work]. *Gedrag & Gezondheid* 1987; 15(4): 147-54.
43. Buunk A, Doosje B, Jans L, et al. Perceived Reciprocity, Social Support, and Stress at Work: The Role of Exchange and Communal Orientation. *J Personal Soc Psychol* 1993; 65(4): 801-11.
44. Geurts S, Schaufeli W, Rutte C. Absenteeism, turnover intention and inequity in the employment relationship. *Work & Stress* 1999; 13(3): 253-67.
45. Kivimaki M, Sutinen R, Elovainio M, et al. Sickness absence in hospital physicians: 2 year follow up study on determinants. *Occup Environ Med* 2001; 58(6): 361-6.
46. Szubert Z, Makowiec-Dabrowska T, Sobala W. Health-related absenteeism among workers employed in various work environments. *Med Pr* 1990; 50: 89-118.
47. Leigh J. Employee and job attributes as predictors of absenteeism in a national sample of workers: the importance of health and dangerous working conditions. *Soc Sci Med* 1991; 33(2): 127-37.
48. Milton D, Glencross P, Walters M. Risk of sick leave associated with outdoor air supply frequency humidification, and occupant complaints. *Indoor Air*. 2000; 10(4): 212-21.
49. Wargocki P, Sundell J, Bischof W, et al. Ventilation and health in non-industrial indoor environments: report from a European multidisciplinary scientific consensus meeting (EUROVEN). *Indoor Air* 2002; 12(2): 113-28.
50. Hopstaken L. *Willens en wetens. Ziekmelden als beredeneerd gedrag [Deliberately. Absenteeism as reasoned behaviour]*. Groningen, 1994: Rijksuniversiteit Groningen.
51. Jacobson B, Aldane S, Goetzel R, et al. The relationship between perceived stress and self-reported illness-related absenteeism. *Am J Health Promot* 1996; 11(1): 54-61.
52. Schechter J, Green L, Olsen L, et al. Application of Karasek's demand/control model a Canadian occupational setting including shift workers during a period of reorganization and downsizing. *Am J Health Promot* 1997; 11(6): 394-9
53. Voss M, Floderus B, Diderichsen F. Changes in sickness absenteeism following the introduction of a qualifying day for sickness benefit -findings from Sweden Post. *Scand J Public Health* 2001; 29(3): 166-74.
54. Feuerstein M, Berkowitz S, Haufler A, et al. Working with low back pain: workplace and individual determinants or limited duty and lost time. *Am J Ind Med* 2001; 40(6): 627-38.

55. Houtman I, Bongers P, Smulders P, et al. Psychosocial stressors at work and musculoskeletal problems. *Scandinavian J Work Environ Health* 1994; 20(2): 139-45.
56. Dewa C, Lin E. Chronic physical illness, psychiatric disorder and disability at the workplace. *Soc Sci Med* 2000; 51(1): 41-50.
57. Moncrieff J, Pomerleau J. Trends in sickness benefits in Great Britain and the contribution of mental disorders. *J Public Health Med* 2000; 22(1): 59-67.
58. Savikko A, Alexanderson K, Hensing G. Do mental health problems increase sickness absence due to other diseases? *Soc Psychiatry Psychiatric Epidemiol* 2001; 36(6): 310-6.
59. Bass A, Bharucha-Reid R, Delaplane-Harris K, et al. Employee drug use, demographic characteristics, work reactions, and absenteeism. *J Occup Health and Psychol* 1996; 1(1): 92-9.
60. Arola H, Pitkanen M, Nygard C, et al. The connection between age, job control and sickness absences among Finnish workers. *Occup Med (Lond)* 1998; 53(3): 229-30.
61. Deursen C van, Houtman I, Bongers P. Werk, privésituatie, riskante gewoonten en ziekteverzuim: verschillen tussen mannen en vrouwen [Work, private circumstances, dangerous habits and absenteeism: differences between men and women]. *Tijdschr Gezondheidsw* 1999; 77(2): 105-15.
62. Alexanderson K, Leijon M, Akerlind I, et al. Epidemiology of sickness absence in a Swedish county in 1985, 1986 and 1987. A three year longitudinal study with focus on gender, age and occupation. *Scand J Soc Med* 1994; 22(1): 27-34.
63. Mastekaasa A. Parenthood, gender and sickness absence. *Soc Sci Med* 2000; 50(12): 1827-42.
64. Hensing G, Alexanderson K. The association between sex segregation, working conditions and sickness absence among employed women. *Occup Environ Med* 2004; 61(2): e7.
65. Isacson A, Hanson B, Janzon L, et al. The epidemiology of sick leave in an urban population in Malmö, Sweden. *Scand J Soc Med* 1992; 20(4): 234-9.
66. Stansfield S, Feeney A, Head J, et al. Sickness absence for psychiatric illness: the Whitehall II Study. *Soc Sci Med* 1995; 40(2): 189-97.
67. Bloemhoff A, Smulders P, van Dijk F, et al. Kwaliteit van de arbeid en gezondheid. De toekomst in zes scenario's [Quality of work and health. The future in six scenarios]. *Tijdschr Soc Gezondheidsz* 1993; 71(1): 11-20.
68. Jenkins R, Harvey S, Butler T, et al. A six year longitudinal study of the occupational consequences of drinking over 'safe limits' of alcohol. *Br J Ind Med* 1992; 49(5): 369-74.
69. Marmot M, North F, Feeney A, et al. Alcohol consumption and sickness absence: from the Whitehall II study. *Addiction* 1993; 88(3): 369-82.
70. Upmark M, Moller J, Romelsjo A. Longitudinal, population-based study of self reported alcohol habits, high levels of sickness-absence, and disability pensions. *J Epid Comm Health* 1999; 53(4): 223-9.
71. Ryan J, Zwerling C, Orav E. Occupational risks associated with cigarette smoking: a prospective study. *Am J Public Health* 1992; 82(1): 29-32.
72. Bush R, Wooden M. Smoking and absence from work: Australian evidence. *Soc Sci Med* 1995; 41(3): 437-46.
73. Halpern M, Shikiar R, Rentz A, et al. Impact of smoking status on workplace absenteeism and productivity. *Tob Contr* 2001; 10(3): 233-8.