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SAARA TÖYRY

Burnout and Self-Reported Health among Finnish Physicians

Doctoral dissertation

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ABSTRACT

Less is known about physicians' physical illnesses than about physicians' mental health. Physicians' burnout was first studied in Finland in 1986. Issues concerning work–family balance have become important among physicians. In Finland, already more than half of working-aged physicians are women.

The aim of this study was to assess Finnish physicians' self-reported health in relation to that of the total employed Finnish population and among physicians according to gender and specialty. The prevalence of physicians' burnout was also determined by gender, working experience, type of employment, and specialty. Physicians' compromises between family and work and the influence of having children on physicians' burnout was also studied.

In 1997, a postal questionnaire was sent to a random sample of licenced physicians from the register of the Finnish Medical Association. A total of 3313 physicians (74%) responded. The Maslach Burnout Inventory was used to measure burnout. The questionnaire also contained questions used in the national health studies of the Finnish adult population.

Physicians reported many common diseases as often as or even more often than other employees. The more commonly reported diseases included back problems, diseases of the digestive system, chronic eczema, and mental disorders. Self-treatment as the only care of physicians' diseases was common. Male physicians did not assess their health as being better than that of other male employees, whereas female physicians rated their health as good or fairly good more often than other female employees did. A total of 44% of the male physicians and 51% of the female physicians experienced severe or moderate burnout (burnout symptoms at least every month) without gender difference when age-adjusted. Physicians working in municipal health centres were more likely to experience burnout than other physicians, and those working as full-time private practitioners or in the field of teaching and research were less likely to experience burnout. Among the specialists, radiologists and psychiatrists were more likely to experience burnout than other specialists. In contrast to the general Finnish population, burnout was commoner among the younger physicians than among the older ones. Female physicians made compromises between family and work more often than male physicians (limited the number of children, delayed having children, gave up postgraduate or continuing medical education, worked part-time because of family, and gave up a job because of a spouse's need to move). Among both genders of physicians, having children was associated with less cynicism and reduced personal accomplishment, but having children did not affect exhaustion.

The difference in self-reported health between the total employed population and physicians does not seem to be high in Finland, but the threshold for seeking formal help is higher for physicians. The prevalence of burnout varies a great deal between different physician groups. As the proportion of female physicians still increases, issues concerning work–family balance will become even more important in the practice of the profession.

National Library of Medicine Classification: QZ 53, W 21, W 85, WA 400, WB 141.4, WB 327, WM 172

Medical Subject Headings: attitude to health; burnout, professional; family relations; Finland; health behavior; health status; job satisfaction; life change events; occupational health; questionnaires; physicians; physicians, women; self care; self medication; sex factors

To my family, Minna, Mika-Matti and Jari

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This work was carried out in 1996–2005 at the Kuopio Regional Institute of Occupational Health (design), at the Research and Development Centre for Occupational Health Services of the Finnish Institute of Occupational Health (data collection and most of the data analysis), and at the Department of Public Health and General Practice in the University of Kuopio (most of the thesis preparation). I am grateful that I have had the opportunity to carry out this study in all of these institutes.

My interest in physicians' health began when Vuokko Hupli, head physician at the Rehabilitation Foundation, gave an inspiring presentation about physicians' rehabilitation at the Annual Eastern Finland Medical Congress (Itä-Suomen Lääketiede) in Kuopio in September 1995. At that time, I was beginning my career as an occupational health physician and was surprised to hear that physicians' occupational health services were not well organized and that physicians entering the rehabilitation centre were often in very poor condition either physically or mentally but were usually very eager to recover.

The next September (1996), I went to work at the Kuopio Regional Institute of Occupational Health as part of my specialization service and explained my interest in the occupational health of physicians to the chief physician, Markku Seuri. He encouraged me to investigate physicians' occupational health services in the region of Eastern Finland. At the same time, the Finnish Medical Association was willing to renew the study on physicians' burnout and working conditions with the Finnish Institute of Occupational Health. This cooperation was the start of the present study. In the beginning, my colleagues and I (the research group) wrote articles for publication in Finnish journals, but gradually we also offered our work to international peer review. However, it took several years before I decided to write my doctoral thesis. In addition, I also worked now and then in other projects so that the completion of my thesis took several years.

Firstly, I want to express my thanks to Vuokko Hupli for her inspiration and her persistent work to improve the well-being of Finnish physicians over many decades.

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Officer of the Association, Santero Kujala, MD, the Past-President of the Association, Kati Myllymäki, MD (present senior medical officer of the Ministry of Social Affairs and Health), Ms Riitta Luhtala (ex-researcher of the Association), and the Medical Director of the Etera Mutual Pension Insurance Company, Professor Juhani Juntunen, MD, PhD.

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During the writing of the articles about psychiatrists' and young physicians' burnout, expert colleagues were included as co-authors outside the original research group. I express my thanks to my following co-authors: Docent Jyrki Korkeila, MD, PhD, Professor Kirsti Kumpulainen, MD, PhD, Pirjo Manninen, MD, PhD, Leena Nykänen, MD, and Juha-Matti Toivola, MD.

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Warm thanks go also to all my colleagues and the entire personnel at both the Department of Public Health and General Practice in the University of Kuopio and the Finnish Institute of Occupational Health in Kuopio and in other towns for their interest in my study and their pleasant company over the years.

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Finally, I want to thank my husband Jari, MD, PhD, and our precious children Minna and Mika-Matti for their love and for reminding me of the real values of life. Minna and Mika-Matti, you have given the whole family much wonderful music and many other unforgettable events during these years. Let the music sing and play in your lives also in the future.

Kuopio, July 2005
Saara Töyry

ABBREVIATIONS

BMI	Body mass index
CI	Confidence interval
CMI	Comparative mortality index
MBI	Maslach Burnout Inventory
MBI-ES	Maslach Burnout Inventory-Educators Survey
MBI-GS	Maslach Burnout Inventory-General Scale
MBI-HSS	Maslach Burnout Inventory-Human Services Survey
OR	Odds ratio
SD	Standard deviation
SDR	Standardized death rate
SIR	Standardized incidence rate
SMR	Standardized mortality ratio

LIST OF ORIGINAL PUBLICATIONS

This thesis is based partially on unpublished results and, for the most part, on the following original publications, referred to in the text by their Roman numerals:

I **Töyry S, Räsänen K, Kujala S, Äärimaa M, Juntunen J, Kalimo R, Luhtala R, Mäkelä P, Myllymäki K, Seuri M, Husman K.** Self-reported health, illness, and self-care among Finnish physicians: a national survey. Arch Fam Med 2000;9:1079-1085.

II **Töyry S, Räsänen K, Seuri M, Äärimaa M, Juntunen J, Kujala S, Husman K.** Increased personal medication use among Finnish physicians from 1986 to 1997. Br J Gen Pract 2004;54:44-46.

III **Korkeila J, Töyry S, Kumpulainen K, Toivola J-M, Räsänen K, Kalimo R.** Burnout and self-perceived health among Finnish psychiatrists and child psychiatrists: a national survey. Scand J Public Health 2003;31:85-91.

IV **Töyry S, Nykänen L, Manninen P, Räsänen K, Kujala S, Husman K.** Mikä nuoren lääkärin työssä uuvuttaa ja kyynistää? [What causes young physicians' exhaustion and cynicism?] Suom Lääkäril 2002;57:5069-5075.

V **Töyry S, Kalimo R, Äärimaa M, Juntunen J, Seuri M, Räsänen K**. Children and work-related stress among physicians. Stress Health 2004;20:213-221.

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CONTENTS

1. INTRODUCTION

Socioeconomic status is an important determinant of morbidity and mortality, both of which are lower among the upper than the lower social classes. Sick leave rates also parallel socioeconomic differences in morbidity and mortality. In accordance, mortality surveys from many countries show that physicians live longer than the general population. Physicians also have low rates of sick leave. It seems that physicians are healthy. However, an important exception in mortality surveys is death by suicide. Physicians' risk of suicide is greater than that of the general population and greater than that of other professionals. This high risk has attracted growing interest in physicians' suicides and mental health, but less is known about physicians' morbidity as regards other common diseases. In this thesis, the prevalence of physicians' chronic diseases and other self-reported health-related outcomes (perceived health, sickness absence, visits to a physician's surgery) were compared with those of the total employed population. The prevalence of self-treatment among physicians was also determined.

Burnout was described already in the early 1970's as prolonged occupational stress that seemed to occur the most prominently among professionals in human services. Therefore, burnout is predominantly studied in the health and teaching professions. Over the years, it has become evident that burnout may develop in all kinds of working situations in which the demands of work and individual capacities are not balanced. Burnout has been described among physicians in selected practice settings and specialities in several countries. In Finland, physicians' burnout was first studied in 1986, when the Finnish Medical Association and the Finnish Institute of Occupational Health conducted a survey called "Stress and Burnout in Physician's Work".

Eleven years later, in 1997, the Finnish Medical Association and the Finnish Institute of Occupational Health conducted another cross-sectional nationwide survey, this time called "Working Conditions and Work Strain among Physicians". The survey was based on the questionnaire of the earlier study in 1986. However, it also contained new questions inquiring into working conditions, health status, use of health services, and combining work and family. These new questions were generally the same as those used in national studies of the Finnish adult population. This thesis is based on the later survey. The earlier study was used only when the possible change in personal

medication use was determined for Finnish physicians from 1986 to 1997. Changes in burnout levels between these two studies could not be assessed because the instrument measuring burnout was not exactly the same. In 1997, the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) was used to measure burnout. To the author's knowledge, these Finnish studies are the only nationwide representative studies on physicians' burnout.

Issues concerning work–family balance have become important among physicians. Most physicians have chosen to combine medicine, marriage, and parenthood. The proportion of female physicians increased in Finland from 1% to 48% from 1900 to 2000. As the number of female physicians is still increasing, gender differences and health-related issues concerning work–family balance are probably becoming even more important among physicians. In this thesis, physicians' compromises between family and work, and the influence of gender and children on physicians' stress and burnout were studied.

2. REVIEW OF THE LITERATURE

2.1 Physicians' mortality and morbidity

Overall mortality, cancer incidence, suicides and mental health have been the main areas of interest in studies on the differences in health between physicians and the general population. Increased specialization has increased the variability of physicians' occupational exposures over time, and this increasing variability may lead to differences in disease and mortality patterns between different physician groups.

2.1.1 Overall mortality

In England and Wales, during 1962–1992, the death rate of National Health Service consultants aged 25 to 74 years, was around half of those expected on the basis of national rates (Carpenter et al. 1997). Low mortality was evident for cardiovascular disease, lung cancer, other diseases related to smoking, and, particularly, diabetes. Male consultants had an increased risk of accidental poisonings and female consultants rated high in suicide. Almost all deaths from accidental poisoning involved prescription drugs.

Only small differences were found in the mortality rate of different specialities in the study of Carpenter et al. (1997). Psychiatrists had a significantly higher overall death rate when compared with all consultants, with significantly raised rates of ischaemic heart disease, injury and poisoning, and colon cancer. A significant excess mortality from cirrhosis was found for anaesthetists, supposedly in relation to occupational exposure to anaesthetic gases. However, the lack of data on alcohol consumption made the findings difficult to interpret.

In the study of Frank et al. (2000a), American male physicians from 28 states reached a higher age (73.0 years for white and 68.7 for black) than all examined professionals (70.9 and 65.3 years, respectively) and all men (70.3 and 63.6 years, respectively) during 1984–1995. The most usual causes of death were the same as those of the general population: heart and cerebrovascular disease and cancer. White male physicians were more likely to die from cerebrovascular disease, accidents, and suicide and less likely to die from chronic obstructive pulmonary disease, pneumonia or influenza, or liver disease than other professional white men were. Black male physicians significantly differed from other black male professionals only in having

higher death rates from diabetes mellitus. Compared with female professionals, white female physicians were more likely to die from cancers of the genital (noncervical) organs and suicide. Black female physicians did not significantly differ from other black female professionals.

Also in Finland, the overall mortality of male physicians in 1971–1980 was lower than that of all economically active men (Rimpelä et al. 1987). However, compared with the mortality of other academic professions, that of male physicians was at the same level or higher – except for cancer. The risk of suicide was twice as high for male physicians as for other academic professions. Because there were relatively few female physicians in the early 1970's, conclusions about their mortality were only tentative. The overall mortality of female physicians was, however, higher than that of women in other academic professions, and it was not lower than that of all economically active women. The authors concluded that either physicians do not use their professional knowledge in a way that lowers their own mortality or that they are exposed to occupational hazards – more likely mental than physical or chemical – that cancel out such an effect.

Also in a new study from Statistics Finland (Pensola et al. 2004), overall mortality of male physicians aged 25 to 64 years was lower in 1996–2000 (age-standardized death rate, SDR 186; comparative mortality index, CMI 72; 95% confidence interval, CI 56–92) than that of all employed men (SDR 258, CMI 100, 95% CI 97–103) in Finland. Corresponding results for female physicians (SDR 93, CMI 76, 95% CI 97–103) were not statistically that significant in a comparison with all employed women (SDR 122, CMI 100, 95% CI 96–104). The life expectancy at 25 years of age was 52.3 for male physicians, 51.4 for all employed men, 57.8 for female physicians, and 57.1 for all employed women.

2.1.1.1 Smoking-associated mortality

Adverse health effects of smoking were found in a prospective study of British physicians. In 1951 the British Medical Association forwarded a questionnaire about their smoking habits to all British physicians. The certified causes of deaths and changes in smoking habits were recorded. After a follow-up period of 20 years, the results suggested that between half and a third of all cigarette smokers will die because

of their smoking (Doll & Peto 1976). A continuation of the study showed that the first 20 years underestimated the hazards of long-term use of tobacco. After 40 years of observation, it seemed that about half of all regular cigarette smokers are eventually killed by their smoking habit (Doll et al. 1994).

In most countries, physicians smoke less than the general population (van Reek & Adriaanse 1991; Chambers 1992; Ohida et al. 2001; Barengo et al. 2003). Lower rates of smoking have been suggested to contribute substantially to the low overall death rates found for diseases related to smoking among physicians (Carpenter et al. 1997). In Finland, 7% of male physicians and 4% of female physicians smoked daily in 2001 (Barengo et al. 2003 & 2004) compared with 29% of men and 20% of women among the general Finnish adult population (Helakorpi et al. 2001).

The prevalence of smoking among Scandinavian physicians decreased strongly from the 1950's and 1960's to the 1980's (van Reek & Adriaanse 1991). The cognitive dissonance of knowing the dangers of smoking seemed to affect physicians. In 1991, the researchers wrote that "if the present changes continue, physicians could be a smoke free profession by the year 2000" (van Reek & Adriaanse 1991). However, the decreasing trend has not been this positive. In Finland the prevalence of smoking among male physicians was the same in 1995 and 2001 (7%), and among female physicians it even increased 1% from 1995 to 2001 (from 4% to 5%) (Barengo et al. 2003 & 2004).

2.1.2 Cancer mortality and morbidity

Certain medical specialists are exposed to certain hazards, for instance, anaesthetists to anaesthetic gases and radiologists to radiation. Doll and Peto (1977) found a small but not significant excess of pancreas cancers among anaesthetists, but it was not accompanied by an excess of deaths from other tumours. Nor did Carpenter et al. (1997) find excesses of deaths from malignant neoplasms among anaesthetists, except from melanoma. Radiologists' death rates from all cancers were close to that for all consultants – above-average death rates were observed for several specific cancers (stomach, kidney, non-Hodgkin's lymphoma, multiple myeloma), but none were significant (Carpenter et al. 1997). The researchers concluded that the results probably reflect the large reductions that have occurred in occupational exposure to radiation over time.

An increased risk of 10% was found for cancer incidence among Swedish physicians, dentists, and other health care workers in a study using incidence data from the Swedish Cancer Environment Register for 1971–1984 (Eriksson et al. 1998). Among the physicians this increase was found for men but not for women. The tumour types with a significantly increased risk among physicians were epithelial skin cancer (both genders) and urinary bladder carcinoma and colon cancer (men). A statistically significant decrease in risk was found for stomach cancer among male physicians and for cervical cancer among female physicians.

In Finland cancer incidence among different health care occupations was estimated for 1971–1980 (Sankila et al. 1990). Contrary to the results of the Swedish study, male physicians constituted the only occupational group among the male health care personnel with a significantly lower cancer risk (standardized incidence ratio, SIR 60, 95% CI 41–84) than that of all economically active men. In particular, the relative risk of lung cancer was low for male physicians (SIR 25, 95% CI 7–63). An elevated cancer risk (SIR 122, 95% CI 115–130), as compared with that for all economically active women, was found for female health care personnel but not for the female physicians (SIR 88, 95% CI 53–137). Nor did female physicians have an elevated incidence of breast cancer (SIR 102, 95% CI 41–211), although the risk of breast cancer was higher than average for all female health care personnel (SIR 137, 95% CI 124–151). Specific exposures (radiation, cytostatics, anesthetic gases, etc.) and personal risk factors (smoking, hormonal and reproductive history and infectious diseases) were not assessed, and thus it was not possible to estimate the effects of specific occupational risk factors.

2.1.3 Suicides and suicidal thoughts

2.1.3.1 Suicides

Physicians' suicide rates have repeatedly been reported to be higher than those of the general population or other academics (Rimpelä et al. 1987; Carpenter et al. 1997; Lindeman 1997; Frank et al. 2000a; Schernhammer et al. 2004). In systematic reviews on suicide mortality among physicians, the estimated relative risk of suicide among male physicians versus that of the general population varied from 1.1 to 3.4 and that among female physicians from 2.3 to 5.7 (Lindeman et al. 1996; Schernhammer et al.

2004). Compared with other professionals, male physicians had a relative suicide mortality that varied from 1.5 to 3.8, and for female physicians the corresponding risk was 3.7–4.5 (Lindeman et al. 1996).

Many international studies also suggest that the suicide ratio of female physicians is higher than that of male physicians (Schernhammer et al. 2004). The number of suicides among Finnish physicians in 1986–1993 was 51, of which 35 (69%) occurred among men and 16 (31%) among women (Lindeman et al. 1997a). It seemed that, in Finland, female physicians did not have a greater risk of suicide than their male colleagues. The SMR (standardized mortality ratio) between male and female physicians was 1.2 (95% CI 0.9–1.7). The results were, however, concordant with the observations of a higher suicide rate for female physicians than for the general population (SMR 2.4, 95% CI 1.5–4.0) and other female professionals (SMR 3.7, 95% CI 2.2–6.0). Male physicians also had a significantly higher risk of suicide than other male professionals (SMR 2.4, 95% CI 1.7–3.3), but not higher than that of the general population (SMR 0.9, 95% CI 0.6–1.2).

There are conflicting reports about the risk of suicide in different specialties (Lindeman 1997; Hem 2004). The literature suggests that certain groups of specialists, such as psychiatrists and anaesthetists, are at high risk of suicide, but many of the studies were beset by methodological limitations (Lindeman 1997; Hem 2004). In Finland, psychiatrists were observed to have the highest suicide rate among all physicians in 1986–1993 (crude mortality rate, cases per 100 000 person-years, 115, 95% CI 47–282) (Lindeman 1997; Lindeman et al. 1997a). However, the number of suicides was small (psychiatrists n = 5), and the statistical precision was poor. General practitioners and non-specialized physicians were found to have the lowest suicide rates in 1986–1993 in Finland (Lindeman 1997; Lindeman et al. 1997a).

Psychiatric disorders and problems related to work are associated with suicide among physicians (Hawton et al. 2004). Depressive disorders and drug or alcohol abuse are the commonest psychiatric diagnoses. In Finland, physicians who committed suicide were also often depressed, and their depression had not necessarily been adequately treated (Lindeman et al. 1997b; Lindeman et al. 1999). Furthermore, Finnish physicians who committed suicide had more somatic diagnoses than engineers and teachers, and a minority of physicians had only a mental diagnosis (Lindeman et al. 1997b).

The commonest method of suicide among physicians is self-poisoning, often with drugs taken from work (Hawton et al. 2004). In Finland, most physicians also commit suicide by self-poisoning, and, as for the method of suicide, physicians used psychotropic substances, hypnotics, and sedatives (especially barbiturates) more often than other professional groups (Lindeman et al. 1997b).

2.1.3.2 Suicidal thoughts

The prevalence of suicidal thoughts (or ideation) varies widely between studies. Firstly, there is no consistent terminology in the area of suicidal problems (Lindeman 1997; Hem 2004). For instance, the concept of suicidality varies from thoughts that life is not worth living to attempted and completed suicide. Secondly, uniform measures are missing, and most studies have developed their own questions for measuring suicidal problems.

In a Norwegian study, as high as 51% of physicians felt that life was not worth living on one or more occasions, and 24% had these feelings sometimes or often, while 10% had seriously considered suicide and 1.6% had attempted suicide (Hem et al. 2000). The predictors of suicide planning were "being female", "living alone", "sick leave due to depression", "subjective health complaints", and "being a specialist in anaesthesiology" (Hem et al. 2000). Suicide planning was mainly attributed to personal and family problems and, to a less extent, to social and work-related problems.

In a study on young physicians in Norway (n = 371), by the end of their first postgraduate year, a quarter of the respondents felt that life had not been worth living during the previous year, 15% wished to be dead, 4% had reached the point at which they seriously considered taking their lives or had even planned how they would go about it, and one (0.3%) had made a first suicide attempt (Tyssen et al. 2001b). The predictors for both postgraduate suicidal planning and transition from thoughts to planning were depressive symptoms and personality traits (Hem 2004; Tyssen et al. 2004).

In Finland, in 1986, the prevalence of suicide attempts among physicians was 0.6% without a gender difference (Olkinuora et al. 1988 & 1990). Furthermore, 1.1% of male and 1.3% of female physicians reported that they had seriously planned suicide, and 20.4% of the men and 24% of the women reported that they had considered suicide at

some time. There were no significant differences between specialties, or between main employment positions, as regards suicidal thoughts or suicide attempts among Finnish physicians in 1986.

2.1.4 Mental health

In a literature review based on the Medline database in 1966–2000 and the Psychlit database in 1970–2000, depression and affective disorders were found to be more prevalent among physicians than among others (Tyssen 2001). The studies also showed the co-existence of depression, suicide (and suicidal behaviour), and alcohol and drug abuse among physicians.

There are theories that explain the high frequency of psychiatric disorders and suicide among physicians (Rucinski & Cybulska 1985). According to the "role strain theory", society and the physician, as part of society, share certain ideals about the role of physicians. The physician's duty is not only to bring relief to the suffering using the whole arsenal of medical knowledge, but also to function at the maximum level of competence at all times. In order to fulfil these expectations, the physician may have to work hard, often at the expense of leisure pursuits. According to the "susceptible personality theory", vulnerability antedates entry into medical school. People with a particular personality are attracted to medicine and accepted into medical schools with disproportionate frequency. Both obsessive-compulsive and narcissistic personality traits have been described as common among physicians (Lindeman 1997; Tyssen 2001). A "interacting model" has also been suggested. Stresses that are inherent in the practice of medicine precipitate mental disorders among those predisposed to it (Rucinski & Cybulska 1985). Practice is particularly stressful to an ambitious inflexible person with a family history of mental disturbance and unhappy or unstable childhood (Tyssen 2001).

In some cases predispositions to depression may predate career or speciality choice (Firth-Cozens 1997). High depression levels have been noted among psychiatrists, as have low levels among surgeons. Firth-Cozens (1997) suggested that, for some psychiatrists, their specialty choice had more to do with a need to understand their own emotional state than simply with the type of work involved. Her studies also provide

strong arguments for career counselling and even for formal selection later in training to ensure that people do not choose inappropriate specialties (Firth-Cozens 2001).

The first postgraduate year is the most distressing and depressive (Firth-Cozens 1997; Tyssen 2001). According to Firth-Cozens (1997) and studies conducted during the previous two decades, approximately 30% of physicians in their first postgraduate year undergo clinical depression, women more often than men. In a Norwegian study, mental health problems increased from 11% in the first year to 17% in the fourth year after graduation, with no significant gender difference in prevalence (Tyssen et al. 2000 & 2001a). Less than half of those in need of treatment had obtained professional health care (Tyssen et al. 2001a). Mental health problems during an internship year could be predicted by both individual susceptibility factors (previous mental health problems and a vulnerability personality trait) and present stress at work (emotional pressure and demanding patients) (Tyssen et al. 2000). In addition, stress outside of work (broken partner relationships) had an independent impact. Brewin and Firth-Cozens (1997) found self-criticism to be a significant predictor of depression for physicians in the first postgraduate year.

2.2 Burnout

Burnout can be determined as a severe consequence of prolonged stress at work, which develops when the demands of work and individual capacities are not balanced. It was originally regarded as a problem only in human services work, where it develops as a result of long-term emotionally involving interaction with clients and related overtaxing demands (Maslach & Jackson 1981). For almost two decades, the research on burnout was based on this assumption. It became evident over the years, however, that burnout can develop in all kinds of work situations in which coping resources are exceeded. Since the Maslach Burnout Inventory-General Scale was published, more research has been conducted also on various other sectors of work (Maslach et al. 1996a).

2.2.1 The three dimensions and the process of burnout

Emotional exhaustion, depersonalization (or cynicism), and lack of personal accomplishment (or professional efficacy) are considered to be the most characteristic components of burnout (Maslach et al. 1996a).

A key aspect of the burnout syndrome is increased feelings of emotional exhaustion (Maslach et al. 2001). It refers to feelings of being emotionally overextended and exhausted by one's work. As emotional resources are depleted, workers feel that they are no longer able to give of themselves at a psychological level. The depersonalization subscale measures an unfeeling and impersonal response towards recipients of one's service, care, treatment, or instruction. Personal accomplishment refers to feelings of competence and successful achievement in one's work with people.

There is no consensus about the development of the burnout syndrome (Schaufeli & Enzmann 1998). However, most suggested models share the assumption of a sequential process (Maslach et al. 2001). Another alternative is that the different dimensions – especially professional efficacy – develop simultaneously but independently (Schaufeli & Enzmann 1998). In a Finnish longitudinal study on international industry enterprise, the results supported the sequential process in which burnout gradually develops from exhaustion, through cynicism, to lack of professional efficacy (Toppinen-Tanner et al. 2002).

2.2.2 Assessment of burnout

The most broadly adopted measure that includes all three dimensions of the burnout syndrome is the Maslach Burnout Inventory (MBI). There are now three versions of the MBI (Maslach et al. 1996a). The original one, the MBI-Human Services Survey (MBI-HSS) was designed to be used with people working in human services and in health care (Maslach & Jackson, 1981 & 1996). It was developed for educational settings (the MBI-Educators Survey, or MBI-ES; formerly known as MBI-Form Ed) (Maslach et al 1996b). The MBI-General Scale (MBI-GS) was designed for all occupations (Schaufeli et al. 1996). It addresses the three dimensions of the original measure, using slightly revised items, and maintains a consistent factor structure across a variety of occupations. The greatest difference is the replacement of depersonalization by cynicism. The cynicism items reflect indifference or a distant attitude towards any work, and not specifically towards personal relationships at work.

In the MBI, each dimension is measured by a separate subscale. However, burnout is a three-dimensional syndrome, and, therefore, none of the factors alone necessarily indicate burnout. Kalimo et al. (2003) have developed a composite syndrome indicator

based on the three components weighted according to their relation with a criterion variable. A syndrome indicator is needed for the study of fully developed burnout (Kalimo et al. 2003). The component-specific approach is relevant when the development of burnout is studied in which different contributors can appear in different time sequences.

2.2.3 Possible causes and consequences of burnout

Schaufeli and Enzmann (1998) reviewed the outcomes of over 250 studies on burnout that could be grouped according to antecedents or possible causes and concomitants or possible consequences. Most of the studies were based on cross-sectional data. Therefore causal relationships could not be confirmed.

2.2.3.1 Work-related predictors

Predictors of burnout include both the demands of work and the lack of various resources (Maslach et al. 1996a). Quantitative demands such as workload and time pressure are strongly and consistently related to burnout, particularly the exhaustion dimension (Schaufeli & Enzmann 1998; Maslach et al. 2001). Qualitative demands such as role conflict and role ambiguity show a moderate-to-high correlation with burnout. Role conflicts occur when conflicting demands have to be met on the job. Role ambiguity occurs when no adequate information is available to help a person do a job well.

Social support and self-regulation of work activities are considered resources. Lack of support from supervisors is especially related to burnout, and it is even more important than support from co-workers (Schaufeli & Enzmann 1998; Maslach et al. 2001).

Lack of feedback is positively related to all three burnout dimensions (Schaufeli & Enzmann 1998; Maslach et al. 2001). Similarly, participation in decision making and autonomy are consistently negatively related to burnout, although the latter relationship is weaker.

2.2.3.2 Demographic and personal characteristics

Of all the biographical characteristics, age is the most consistently related to burnout (Schaufeli & Enzmann 1998; Maslach et al. 2001). Among younger employees the level

of burnout is reported to be higher than among those over 30 or 40 years of age. This finding is in line with the observation that burnout is negatively related to work experience (Schaufeli & Enzmann 1998; Maslach et al. 2001). The MBI manual (Maslach et al. 1996) shows the decline of burnout symptoms with increasing age the most clearly for depersonalization and emotional exhaustion. One explanation is that increasing age or work experience is protective, and another is a survivor population. The implication of the second interpretation is a selection effect; those who are more vulnerable to stress may have quit their jobs, leaving behind survivors who exhibit low levels of burnout. The studies are, however, based on selected occupations, mostly in human services. In the population-wide studies from which the published data are available, burnout tended, instead, to slightly increase with age across occupations, especially among women (Kalimo & Toppinen 1997; Ahola et al. 2004).

Gender has not been a strong predictor of burnout. However, men often score higher on depersonalization and women on exhaustion (Schaufeli & Enzmann 1998; Maslach et al. 2001). These results could be related to gender role stereotypes. For instance, it has been argued that men hold instrumental attitudes, whereas women are more emotionally responsive.

With regard to marital status, those who are unmarried (especially men) seem to be more prone to burnout than those who are married (Schaufeli & Enzmann 1998; Maslach et al. 2001). Possibly, other factors, such as age or psychosocial problems that co-determine marital status, may also explain this difference.

The role of personality characteristics or traits in the development of burnout is a complicated issue (Schaufeli & Enzmann 1998). A high correlation does not necessarily imply causality. People may put themselves in situations that match their personality, and such situations may foster burnout. Particularly low levels of hardiness (involvement in daily activities, a sense of control over events, openness to change), poor self-esteem, neuroticism and an avoidant coping type have consistently been related to burnout (Schaufeli & Enzmann 1998; Maslach et al. 2001). In a longitudinal Finnish study, a strong sense of coherence seemed to be important in preventing burn out among workers (Kalimo et al. 2003).

2.2.3.3 Concomitants and possible consequences

The effects of burnout can be classified into individual consequences, effects on work orientation and attitudes, and organizational consequences. In a critical analysis by Schaufeli and Enzmann (1988) depression, psychosomatic complaints, and job dissatisfaction were found to be the most important concomitants or consequences.

Depression is an extensively studied correlate of burnout on the individual level, particularly with regard to its discriminant validity with burnout (Schaufeli & Enzmann 1998). Burnout has been regarded as both a consequence and a cause of depression. Stressful working conditions may also independently lead to burnout, as well as to depression. The distinction between burnout and depression has been established empirically in several studies using the MBI and various measures of depression (Maslach et al. 1996a & 2001). This research has established that burnout is a problem that is specific to the work context, in contrast to depression, which tends to pervade every domain of a person's life. Particularly the emotional exhaustion component of burnout is related to depression; both share about 25% of the variance (Schaufeli & Enzmann 1998). The relationships with depersonalization and personal accomplishment are not as strong.

A consistent positive correlation has been found between psychosomatic complaints and burnout, in particular with emotional exhaustion, whereas the relationships with depersonalization and personal accomplishment are weaker (Schaufeli & Enzmann 1998). Psychosomatic complaints are more likely to be considered as concomitants of burnout than as causes or consequences.

Job dissatisfaction correlates comparatively well with all three burnout dimensions but most highly with depersonalization (Schaufeli & Enzmann 1998). Since most studies are cross-sectional, no causal order can be determined. Alternatively, both burnout and job dissatisfaction may be caused by another factor, such as poor working conditions (Maslach et al. 2001).

Organizational commitment consistently correlates negatively with emotional exhaustion and depersonalization, although less strongly than job satisfaction does (Schaufeli & Enzmann 1998). Similar results have been found with respect to the intention to quit.

At the organizational level, the most important concomitants and consequences of burnout are absenteeism, job turnover, and impaired performance. The relationships with absenteeism and actual turnover are much weaker than with turnover intentions (Schaufeli & Enzmann 1998).

2.2.4 Physicians' burnout

Burnout has been described among physicians in several countries, practice settings, and specialities (Appendix 1). Most studies are cross-sectional questionnaire surveys, and the MBI is the tool most frequently used to assess burnout. The "Tedium scale", which covers only the exhaustion items, has also been used (McCranie & Brandsma 1988; Freeborn 2001). The response rate of the reviewed studies varies from 52% to 94%, and the number of respondents from 67 to 3098. Individual and work characteristics also vary a great deal between studies and, therefore, make comparisons between studies difficult. The use of the MBI also varies. Most researchers have used the MBI-HSS, consisting of 22 statements and assessing all three dimensions of the burnout syndrome by frequency, scored from 0 (never) to 6 (every day). The intensity scale of the MBI has rarely been used. The mean scores and standard deviations on the MBI subscales are usually reported. The MBI subscales have also been classified on a 3-point scale as high, average or medium, and low according to predetermined cut-off scores based on data from the normative samples or health professionals in the United States. Dichotomization to high and low scores has also been used. However, some studies do not present the level of burnout in their samples at all when focusing on evaluating relationships between burnout and work-related or personal factors. Because the principles used to interpret burnout vary, one must be careful when comparing measures of burnout or its sub-scales between different studies. A composite syndrome indicator introduced by Kalimo et al. (1997 & 2003) has not been used in any of the studies on physicians.

2.2.4.1 Work-related predictors

The concepts and measures used in assessments of work-related stressors vary between studies (Appendix 1). Furthermore, by definition, burnout is a three-dimensional

syndrome. When each of the components are studied separately, it is difficult to draw exact conclusions on the causes of the whole burnout syndrome.

Organizational measures – specifically evaluative ratings of workload or scheduling and input or influence – have been found to be important predictors of burnout, particularly of the emotional exhaustion dimension, among physicians (Deckard et al. 1994).

Representative items for workload or scheduling have been, for instance, "the amount of time you are on call", "the daily load of patients you see", and "the number of hours you work during an average week" (Deckard et al. 1994). Workload has been operationalized also as stress from overload (Prosser et al.1997), high quantitative workload (Geurts et al. 1999), work overload in order to do a good job (Freeborn 2001), and feeling overloaded and its effect on home life (Ramirez et al. 1996). These findings support the general notion that burnout is a response to overload (Maslach et al. 2001). There is evidence that measures of perceived workload tend to be stronger predictors of the various strain variables than the more "objective" means used, such as work hours, number of consultations, or on-call sleeping hours (Falkum 1996; Tyssen et al. 2000).

Representative items for input or influence have been, for instance, "your control over the organization and delivery of medical services in your practice", "your ability to set the pace of your own work", and "your input into management decisions that affect your practice" (Deckard et al. 1994). Physicians' evaluations of their ability to have input into and influence on various aspects of their practices has been found to be an important predictor of physician burnout also in a study by Freeborn (2001), and especially among female physicians in a study by McMurray et al. (2000).

Freeborn (2001) studied factors that predict burnout, professional satisfaction, and organizational commitment among physicians. He found that a sense of control over the practice environment was the single most important predictor for all these outcomes. In this study "control" was a summary measure based on four items – "ability to influence work environment", "opportunity to participate in decision making", "the degree to which lack of autonomy contributes to feelings of stress", and "satisfaction with control over schedule".

Physicians' burnout is also related to such resource factors as low social support from colleagues (Freeborn 2001) and feeling poorly resourced and managed (Ramirez et al.

1996). Other significant predictors of physicians' burnout have also been patients' demands and expectations, low satisfaction with the quality of care that the physician can provide (Deckard et al. 1994), dealing with patients' suffering, insufficient training in communication and management skills (Ramirez et al. 1996), stress from uncertainty in patient care (Freeborn 2001), perceived lack of opportunities for continuing medical education at work (Kushnir et al. 2000), residents' troublesome relationships with their superior (Geurts et al. 1999), and the interference of work on home life (Linzer et al. 2001).

2.2.4.2 Demographic and personal characteristics

Age (Deckard et al. 1994; Agius et al. 1996; Ramirez et al. 1996; Freeborn 2001; Shanafelt et al. 2002) and years as a consultant (Agius et al. 1996) have been found to be negatively associated with physicians' burnout. As mentioned earlier, one explanation could be that increasing age or time as a physician is protective, and another explanation is the selection bias inherent in cross-sectional studies. The implication of the second interpretation is that physicians who are more vulnerable to stress may change career during their higher specialist training or retire early in their consultant employment (Agius et al. 1996).

The relationship between burnout and gender is not so clear. Some studies show that burnout occurs more often among female than male physicians (McMurray et al. 2000), but most of the reviewed studies do not report gender difference.

As far as family structure is concerned, being single was found to be a risk factor for burnout among consultants (Ramirez et al. 1996), and the presence of children under the age of 6 years did not predict burnout (McMurray et al. 2000).

To what extent a difference in burnout risk across specialties reflects differences in the nature of work or differences in the nature of physicians is difficult to determine. For instance, Deary et al. (1996) found that psychiatrists differ from surgeons and from other physicians with respect to several personality traits, and psychiatrists also report significantly more burnout and depression. In different specialities, however, the nature of work is very different. McCranie and Brandsma (1988) have also shown that vulnerability to burnout among physicians is associated with personality tendencies. In

the prospective study of a large cohort of physicians by McManus et al. (2004), physicians with greater stress and emotional exhaustion had higher neuroticism scores.

2.2.4.3 Physicians' burnout in Finland

In Finland, physicians' burnout was first studied in 1986 in a nationally representative questionnaire survey (Juntunen et al. 1988a; Olkinuora et al. 1988 & 1990). Olkinuora et al. (1988 & 1990) used a self-constructed burnout index in which most of the items were adopted and modified from the MBI. The highest burnout scores for both genders were found for those working in municipal health centres. The lowest burnout scores were found for those working in private practice, universities, research institutes, public offices and organizations. Non-specialists had higher burnout scores than specialists. For male specialists the highest burnout scores were found in the combined group of general practice and occupational health and in the combined group of psychiatry and child psychiatry. Female specialists in general practice, occupational health, and radiology had the highest scores among female physicians. Increased alcohol consumption was associated with burnout symptoms (Juntunen et al. 1988b).

2.3 Sickness absence among physicians

Sickness absence can be used as an integrated measure of physical, psychological, and social functioning in studies of working populations (Marmot et al. 1995). Physicians have traditionally had a low rate of sickness absence (Waldron 1996; Baldwin et al. 1997; McKevitt et al. 1997; Kivimäki et al. 2001; Rosvold & Bjertness 2001). Among physicians, however, going to work does not necessarily indicate unimpaired functioning. It has been reported that most physicians (81–87%) continue to work when they feel too unwell to be able to carry out their duties to the best of their ability (Waldron 1996; Baldwin et al. 1997; McKevitt et al. 1997).

According to a Norwegian study (n = 1015), during the previous year, 80% of the physicians had worked with an illness for which they would have sick-listed their patients, and 48% had done this twice or more (Rosvold & Bjertness 2001). Infectious diseases constituted 66% and musculoskeletal problems 16% of all the reported diseases. Working when ill was reported significantly more often by the physicians who were 30-39 years (compared with physicians aged 60-69 years), by those who worked

as a clinician outside a hospital, by those who reported medical treatment during the preceding 3 years, and by those who had low job satisfaction.

There are cultural and organizational factors that influence physicians' decisions not to take sick leave, for example, the awareness that an absence will lead to an increased workload on colleagues or the feelings of responsibility towards patients (McKevitt et al. 1997). Self-employed physicians and young physicians may also worry about economic losses during sick leave (Rosvold & Bjertness 2001). Physicians may also be reluctant to adopt the patient role. No matter whether the illness is physical or mental, many physicians express the idea that illness is inappropriate for physicians (McKevitt & Morgan 1997).

In a study by Kivimäki et al. (1999 & 2001), sickness absence rates for both short and long leaves were significantly lower for hospital physicians than for head nurses or ward sisters. Kivimäki et al. (2001 & 2002) also found that the sources of sickness absence among hospital physicians could not be explained only by the traditional focus on a person's health, overload, and job control, but rather by problems with teamwork. Teamwork was defined by the extent to which the members of a work unit share and accept common goals, interact with each other, and together develop performance. After health outcomes, poor teamwork made the strongest contribution to the long-term absence of physicians, exceeding overload and low perceived control (Kivimäki et al. 2001 & 2002). Long sick leaves are a more accurate measure of health than short leaves, which may also reflect voluntary absenteeism (Marmot et al. 1995; Vahtera et al. 2004).

2.4 Use of health services among physicians

Physicians use formal health services seldom but treat themselves often. In England most consultants and general practitioners are registered with a general practitioner, but consultation rates with their general practitioner appeared to be low (Chambers & Belcher 1992; Baldwin et al. 1997; McKevitt et al. 1997; Forsythe et al. 1999). Physicians develop maladaptive patterns, such as continuing to work when unfit, self-treatment, self-referral and consulting friends and colleagues rather than going to a formal consultation.

In 1993, the Norwegian Medical Association carried out a nationwide survey (n = 1015) to study Norwegian physicians' health and welfare (Aasland et al. 1997). More physicians reported self-treatment (75%) than having been treated by colleagues (68%) during the preceding 3 years (Rosvold & Bjertness 2002). Generally this treatment by another physician was obtained by consulting a colleague at work, a friend, or by referring oneself to a hospital, although the respondents preferred to be treated by physicians with whom they had no personal ties. Clinicians working outside a hospital were more likely than hospital physicians to practise self-treatment.

Self-treatment had been practised by 13% of Norwegian physicians for an illness for which they retrospectively would have consulted another physician (Rosvold & Bjertness 2002). Consequences of self-treatment included delayed diagnosis (25%), delayed medication (17%), worsening of the illness (16%), delayed examination (14%), and delayed hospitalization (8%).

The Norwegian study was conducted in 1993. Thereafter some changes were made in the health services provided for Norwegian physicians (Rosvold & Bjertness 2002). In 2002, a "physician for physicians" service was available in 13 of 19 counties in Norway, whereas in 1993 it was available only in 4 counties. This service gives physicians the possibility to seek a physician who is specially trained to treat colleagues. However, many physicians have not yet registered for this service.

An American study (n = 306) found a low use of health services in general among physicians, but a high use of preventive tests (e.g., sigmoidoscopies, cholesterol tests, mammographies, pap tests, prostate-specific antigen tests) (Wachtel et al. 1995). Preventive tests tended to be ordered by another physician, rather than by the respondent. The respondents in this study were primarily fee-for-service providers.

In Norway a large proportion of the physicians did not comply with the recommendations for breast self-examination or pap smear testing (Rosvold et al. 2001). When compared with other university-educated Norwegian women, physicians were more likely to follow the breast self-examination recommendation and significantly less likely to follow the recommendation for pap smears.

The way physicians' personal health habits affect clinical practice has been of interest (Wells et al. 1984; Schwartz et al 1991; Cornuz et al. 2000; Frank et al. 2000b). Physicians with good personal health habits or a desire to improve their own health are

more likely to counsel or screen patients regarding prevention. For instance, physicians who ate less fat were more likely to counsel about or screen their patients for cholesterol; those who drank less were more likely to counsel regarding alcohol use; frequent performers of breast self-examination were more likely to perform patient breast examinations; and users of postmenopausal hormone replacement therapy were more likely to discuss the practice with patients (Frank et al. 2000b). Similar findings have been observed in surveys of physician attitudes and practices towards smoking (Ohida et al. 2001; Barengo et al. 2003).

2.5 Occupational health services among physicians

In a British study (n = 1151) only 11% of the general practitioners reported that there was an occupational health service available for them compared with 95% of the consultants (Forsythe et al. 1999). Most of the consultants (57%) used the occupational health service mainly for preventive and surveillance procedures.

In another British study (n = 126) none of the physicians who had taken sick leave had ever consulted their occupational health service, even though they believed that their sick leave had been caused by their work (Waldron 1996). The reasons for sick leave included infections contracted from patients, stress, and mental break down. Most of the respondents were general practitioners or hospital physicians.

In a study of junior doctors (n = 142), most of them had no clear idea of the role of an occupational health service, and they were not in the habit of using such a service (Baldwin et al. 1997). A total of 70% did not know the name of the occupational health physician, 59% did not know where the department was, and 35% could not recall having been given information about the service. Overall, young physicians saw a greater role for an occupational health physician with respect to physical disorders than to psychological ones. They also saw a greater role for an occupational health physician in assessing a condition and arranging treatment than in the assessing fitness for work.

In Norway, only 8% of the responding physicians (n = 1015) had been to a health control in the occupational health service during the preceding 3 years (Rosvold & Bjertness 2002). A total of 37% had been to a health control somewhere in health care, but almost half of them had initiated the control themselves.

In Finland, all physicians working in hospitals, health centres, and other public employment are covered by occupational health services, while private practitioners have to arrange these services for themselves. However, the surveys conducted in 1991 and 1996 concluded that physicians' utilization of occupational health services was minimal in hospitals and health centres (Töyry et al. 1998). In 1996 the three commonest reasons for physicians' illness-related consultations in occupational health units were musculoskeletal diseases, acute infections, and burnout symptoms. Suggestions for developing physicians' occupational health services included the need for national guidelines for occupational health units, the distribution of information about occupational health services to physicians, and the inclusion of occupational health and safety issues both in the basic curriculum and in continuous education for physicians. A low use of occupational health services among Finnish hospital physicians was also found in the dissertation study of Mäenpää (2000).

2.6 Physicians' self-medication

Self-medication as a form of self-treatment is common among physicians. Most (61%–84%) physicians report that they prescribe medication for themselves (Chambers 1992; Chambers & Belcher 1992 & 1993; Pullen et al. 1995; Wachtel et al. 1995; Waldron 1996; Baldwin et al. 1997; Rosvold et al. 1998; Forsythe et al. 1999; Rosvold & Bjertness 2002). Physicians have easier access to medicinal therapy than other people do, both through self-prescription and through the use of samples obtained directly from representatives of pharmaceutical companies. Self-medication starts early in physicians' careers and may remain hidden unless specifically addressed (Christie et al. 1998).

Studies from England and Norway showed that 80–94% of hypnotics, 69–80% of tranquillizers, 50% of antidepressants, and 83% of ulcer-healing drugs were self-prescribed by physicians (Chambers 1992; Chambers & Belcher 1992; Rosvold et al. 1998). There is no consensus about whether self-investigation and self-medication is acceptable for physicians. In Great Britain at least two thirds of the general practitioners thought that self-medication with antacids was nearly always acceptable, whereas with antidepressants, opiate analgesics, and antihypertensive and anti-anginal drugs self-medication was almost never acceptable (Chambers 1993). There was little agreement as to whether antibiotics, benzodiazepines, hypnotics, or H_2 antagonists are appropriate

for self-medication. In a study by Davidson and Schattner (2003), 9% of Australian physicians believed it was acceptable to self-prescribe psychotropic medication.

2.7 Physicians in Finland

2.7.1 Demographic characteristics of physicians

There were, in all, 17 588 physicians in Finland on 31 December 1997 (Finnish Medical Association 1998 & 2004a). The number of physicians increased considerably during the 20th century (Table 1). While in 1900 there were fewer than 400 physicians in Finland, by 1950 the number was more than fivefold, and from 1950 to 2000 the increase was ninefold. In 1900, the density of physicians was one per 7143 inhabitants, and in 1997 it was one per 309.

Table 1. Number of physicians, proportion of women, and number of population per physician in Finland in 1900–2003[a]

Year	Physicians N	Percentage of women (%)	Population per physician (N)
1900	373	1	7143
1950	2034	21	2018
1997	17588	47	309
2000	18925	48	274
2003	20119	49	259

[a]Finnish Medical Association 2004a.

The proportion of female physicians increased during the 20th century and is still increasing (Table 1). While in 1900 only 1% of all Finnish physicians were women, in 1950 the percentage was 21%. In 1997, nearly half of all Finnish physicians (47%) were women, and 65% of those under 30 years of age were women (in 2003, 49% and 67%, respectively) (Finnish Medical Association 2004a).

The mean age of all Finnish physicians was 44.9 years (median 43.0 years) in 1997. Female physicians were, on average, younger (mean 41.7 years) than male physicians (mean 47.7 years). In 2002, the mean age of Finnish physicians had increased to 47.2 (median 46.0 years) (Finnish Medical Association 2003a).

2.7.2 Main employment

The number of physicians of working age (under 63 years) was 15 925 on 31 December 1997 (Finnish Medical Association 1998). Altogether 14 120 physicians were in physician posts (Table 2). Approximately 850 Finnish physicians were permanently or temporarily living abroad, and about 250 physicians were unemployed. The rest were retired or not in physician posts for another reason.

Table 2. Number and proportion of all physicians and the proportion of women in Finland in 1997 and in 2003 by main employment [a]

Type of employment	1997			2003		
	All physicians		Percentage	All physicians		Percentage
	N	%	of women	N	%	of women
Hospitals	6560	46	44	7240	47	49
Health centres	3530	25	58	3372	22	60
Teaching, research	1250	9	39	1052	7	46
Other public medical centres	480	3	61	420	3	68
Occupational health	570	4	44	829	5	53
Private practice	1150	8	48	1507	10	50
Other physician posts	580	4	33	854	6	42
Total	14120	100	47	15271	100	52

[a] Finnish Medical Association 1998 & 2004a.

Most Finnish physicians work in the public sector. In 1997, nearly half of all practising physicians in Finland (46%) were employed in hospitals, and 25% worked in municipal health centres (Table 2). About 9% was employed in teaching and research, and 8% worked full-time as private practitioners. Fewer were employed in other public medical centres, in occupational health care, in administration, in organizations, or in other physician posts.

Although less than 10% of Finnish physicians earned their living solely as private practitioners, about one third had a part-time private practice in addition to working in a hospital or health centre (Finnish Medical Association 2003b). Most private practitioners work in group practices.

Women form a majority among primary care physicians in the public health sector. In 1997, they constituted 58% of the physicians working at municipal health centres,

which are the major providers of primary health care in Finland. The proportion of women is, however, increasing in all sectors (Table 2).

2.7.3 Specialists and doctoral degrees

The proportion of specialists has increased among Finnish physicians during the last few decades. In 1997, approximately 58% of Finnish physicians were specialists, 47% of the women and 68% of the men (Finnish Medical Association 1998). For example, in 1960, the proportion of specialists was 41% (62% in 2003) (Finnish Medical Association 2004a).

General practice, internal medicine, and surgery are the largest specialties in Finland. Before 1999, specialist licenses were granted in 32 specialties after 6 years of postgraduate training and in 60 specialties after 8 years of training (former subspecialties) (Halila 1998). In 1999, specialist education was revised in Finland, and the earlier 6-year and 8-year specialization programmes were replaced by 49 specialization programmes, 16 of which have 5-year post-graduate training and 33 require 6 years of postgraduate training (Hyppölä 2001).

Traditionally male-dominated specialities have been surgery (13% women in 1997), sports medicine (12%), laboratory specialities (e.g., clinical physiology 10%; clinical pharmacology 12%; clinical chemistry 20%; clinical neurophysiology 25%), public health (25%), pathology (26%), physical and rehabilitation medicine (27%), and otolaryngology (28%) (Table 3). In 1997, the proportion of female specialists was the greatest in child psychiatry (83%), child neurology (79%), and phoniatrics (80%). In 1997, other female-dominated specialities were clinical genetics (65%), dermatology (64%), geriatrics (61%) and paediatrics (58%). Since 1997, also oncology (50% women in 1997 and 63% women in 2003), psychiatry (in 1997 49%, in 2003 56%), obstetrics and gynaecology (49% in 1997, 61% in 2003), respiratory medicine (47% in 1997, 54% in 2003), and general practice (42% in 1997, 51% in 2003) have become female dominated (Finnish Medical Association 1998 & 2004a).

In 1997, a postgraduate degree, doctoral degree, had been received by 18% of physicians, 26% of men and 10% of women (29% of men and 14% of women in 2002) (Finnish Medical Association 1998 & 2003a). About one third of new doctoral degrees are earned by women (Finnish Medical Association 2003a).

Table 3. Number of specialists (under 63 years of age) and the proportion of women by specialty in Finland in 1997 and in 2003 [a]

Specialty	1997		2003 [b]	
	Total number N	Percentage of women	Total number N	Percentage of women
Anaesthesiology	549	39	656	42
Child neurology	68	79	84	83
Child psychiatry	176	83	211	83
Clinical chemistry	93	20	95	32
Clinical genetics	23	65	23	70
Clinical microbiology	88	36	96	41
Clinical neurophysiology	55	25	71	35
Clinical pharmacology	24	12	31	23
Clinical physiology	58	10	68	18
Dermatology	171	64	186	68
Forensic medicine	29	34	29	41
General practice	1738	42	2163	51
Geriatrics	52	61	113	66
Internal medicine	1034	31	1187	39
Neurology	233	40	276	48
Neurosurgery	38	5	46	11
Obstetrics and gynaecology	546	49	607	61
Occupational health	483	32	584	42
Oncology	95	50	121	63
Ophthalmology	342	45	389	48
Oral and maxillofacial surgery	15	13	17	18
Otolaryngology	267	28	318	31
Paediatrics	531	58	597	60
Pathology	156	26	156	31
Phoniatrics	20	80	21	81
Physical and rehabilitation medicine	128	27	153	31
Psychiatry	804	49	1012	56
Public health	51	25	68	38
Radiology	494	34	559	37
Respiratory medicine	202	47	229	54
Sports medicine	32	12	38	18
Surgery	937	13	1029	18

[a] Finnish Medical Association 1998 & 2004a.
[b] According to former main specialties (specialist education was revised in 1999).

3. AIMS OF THE STUDY

The aims of this study were as follows:

1. To compare Finnish physicians' self-reported health status, sick leaves, and the use of health services with those of the total employed population and among physicians according to gender and specialty (I).

2. To determine whether personal medication use had changed among Finnish physicians from 1986 to 1997 and to determine the prevalence of self-medication in 1997 (II).

3. To determine the prevalence of burnout among Finnish physicians by gender, main employment, position, and specialty (not included in the original publications).

4. To investigate self-reported health status, the prevalence of mental disorders and suicidal thoughts, and the use of health services among Finnish psychiatrists and child psychiatrists in comparison with other physicians (III).

5. To determine the prevalence of burnout and factors associated with it among young Finnish physicians (IV).

6. To analyse the influence of gender and children on physicians' stress and burnout and to obtain information on the compromises physicians make between family and work (V).

4. PARTICIPANTS AND METHODS

4.1 Participants and the representativeness of the respondents

The basic population consisted of all licensed physicians in 1997 who resided permanently in Finland, were younger than 66 years, and were not retired (n = 13 615). In October 1997, a postal questionnaire was sent to 1 of every 3 licensed physicians (n = 4477) randomly selected from the register of the Finnish Medical Association. This register covers all licensed physicians in Finland. After one reminder, a total of 3313 physicians (74%) had responded. The representativeness of the basic population, sample, and respondents according to gender, age, employment location, and specialty are shown in Tables 4–7. Women and hospital physicians were slightly overrepresented among the respondents.

Publication II also included a sample of physicians from the year 1986. As in 1997, also in 1986, a postal questionnaire was sent to a random sample of licensed physicians (n = 3496) under 66 years of age from the register of the Finnish Medical Association (Juntunen et al. 1988a). A total of 2671 physicians (76%) representative of Finnish physicians responded.

Table 4. Number and proportion of Finnish physicians by gender in 1997: basic population, sample and respondents

	Basic population		Sample		Respondents[a]	
	N	%	N	%	N	%
Women	6413	47.1	2122	47.4	1675	50.6
Men	7202	52.9	2355	52.6	1636	49.4
Total	13615	100.0	4477	100.0	3311	100.0

[a] Gender was unknown for 2 physicians.

Table 5. Mean age of Finnish physicians by gender in 1997: basic population, sample and respondents

	Basic population N = 13 615		Sample N = 4477		Respondents[a] N = 3244	
	Years	SD[b]	Years	SD[b]	Years	SD[b]
Women	40.5	8.2	40.7	8.2	40.3	8.2
Men	44.7	8.7	44.8	8.7	44.5	8.8
Total	42.7	8.7	42.8	8.7	42.3	8.7

[a] Gender was unknown for 2 physicians, and age was unknown for 67.
[b] Standard deviation.

Table 6. Finnish physicians' specialization status and main employment by gender in 1997: basic population, sample and respondents (%)

	Basic population N = 13 615	Sample N = 4477	Respondents[a] N = 3313
Specialization			
Men			
Non-specialists	34.6	32.1	30.6
Specialists	65.4	67.9	69.4
Women			
Non-specialists	55.6	49.5	49.4
Specialists	44.4	50.5	50.6
Main employment			
Men			
Hospital	50.6	50.3	54.9
Municipal health centre	19.7	18.7	19.1
Other	29.7	30.9	26.0
Women			
Hospital	43.4	44.1	49.3
Municipal health centre	30.2	30.2	27.7
Other	26.4	25.8	23.0

[a] Gender was unknown for 2 physicians, specialization status was unknown for 7, and main employment was unknown for 1.

Table 7. Finnish physicians by specialty in 1997: all specialists under 63 years of age and the respondent specialists

Specialty	All working-aged specialists[a]		Respondent specialists	
	N	%	N	%
Anaesthesiology	549	5.7	118	5.4
Child psychiatry	176	1.8	49	2.3
Dermatology	171	1.8	28	1.3
General practice	1738	18.1	446	20.5
Internal medicine	1034	10.8	235	10.8
Neurology	233	2.4	47	2.2
Obstetrics and gynaecology	546	5.7	131	6.0
Occupational health	483	5.0	119	5.5
Ophthalmology	342	3.6	68	3.1
Otorhinolaryngology	267	2.8	59	2.7
Paediatrics	531	5.5	125	5.7
Pathology	156	1.6	34	1.6
Physical and rehabilitation medicine	128	1.3	39	1.8
Psychiatry	804	8.4	172	7.9
Radiology	494	5.1	93	4.3
Respiratory medicine	202	2.1	38	1.7
Surgery	937	9.8	186	8.5
Other specialties	813	8.5	190	8.7
Total licences	9604[b]	100.0	2177[b]	100.0
Total specialists	8779[b]		1956[b]	

[a] Finnish Medical Association 1998.
[b] One physician could have more than one specialty.

4.2 The questionnaire

The questionnaire (Appendix 2) was based on the "Stress and Burnout in Physician's Work" questionnaire that had been used in 1986 (Juntunen et al. 1988a). The questionnaire from 1986 contained 99 questions or groups of questions embracing background information, stress and burnout symptoms, alcohol and medication use, and suicidal thoughts. In 1986, burnout was measured using the burnout index of the researchers (Juntunen et al. 1988a; Olkinuora et al. 1988 & 1990), in which most of the items had been adopted and modified from the MBI (Maslach and Jackson 1981). In 1997, the MBI itself was used to measure burnout (Maslach and Jackson 1981; Maslach et al. 1996a).

In 1997, the questionnaire also contained new questions inquiring about working conditions, health status, use of health services, and combining work and family; these questions were mainly the same as those used in national studies of the Finnish adult population in 1997 (Helakorpi et al. 1997; Piirainen et al. 1997; Lehto & Sutela 1998). "Health Behaviour among the Finnish Adult Population" is a postal survey that has been sent annually since 1978 (Helakorpi et al. 1997). "Work and Health among Employees" (Piirainen et al. 1997) and "Working Conditions" (Lehto & Sutela 1998) are interview surveys. The "Work and Health among Employees" survey has been carried out every third year since 1997 as a telephone interview. "Working conditions" has been administered in a personal visit every 6 or 7 years since 1977.

During the development phase in 1997, the questions were tested among a group of physicians, but no formal pilot study was carried out. The final version of the questionnaire contained 117 questions or groups of questions, of which 69 were identical to those used in 1986. Most of the questions were structured, but there was also an open question that dealt with the development of occupational health services for physicians. The questionnaire used in the survey was comprehensive with several items in addition to those reported in this study.

4.2.1 Self-reported health status, sickness absence and the use of health services (I)

Most of the questions concerning health status, sickness absence, and the use of health services were exactly the same as those used in national studies of the Finnish adult population (Helakorpi et al. 1997; Piirainen et al. 1997). For the comparison,

unemployed and retired persons were excluded from the data of the national studies. Perceived health was asked as a structured question about whether a person assessed his or her health to be "good", "fairly good", "average", "rather poor", or "poor". The prevalence of diseases was assessed using the same list of diseases as in previous national health studies, and each person was asked whether he or she had experienced any of the diseases during the past 12 months. Furthermore, the physicians were asked if they had treated themselves or had been treated by another physician. Sick leaves and visits to a physician's surgery during the last year were also asked with the same questions as in the national health studies, and the respondents were asked how many days of sick leave they had taken and how many times they had visited a physician's surgery during the past 12 months.

4.2.2 Personal medication use and self-medication (II)

The questions concerning personal medication use were the same in the 1986 and 1997 studies. The physicians were asked if they used any medication often or regularly and, if they did, what were the medical conditions for which the drugs were used. In 1997, the questionnaire also included a list of diseases and a question concerning whether a physician had treated him- or herself or had been treated by another doctor. Medication use without consultation with another physician was considered to be self-medication.

4.2.3 Burnout (III–V)

The MBI-HSS was used to measure burnout (Maslach & Jackson 1981 & 1996). The inventory asks respondents to indicate the frequency with which they experience certain feelings related to their work on a 7-point Likert scale, ranging from "never" (= 0) to "every day" (= 6). Emotional exhaustion was measured with a sub-scale of nine items, cynicism (or depersonalization) with a sub-scale of five items, and personal accomplishment (or professional efficacy) with eight items. Emotional exhaustion refers to feelings of being emotionally overextended and exhausted by one's work. Cynicism (or depersonalization) sub-scale measures an unfeeling and impersonal response towards recipients of one's service, care, treatment, or instruction. Personal accomplishment refers to feelings of competence and successful achievement in one's work with people. A score for each sub-scale was computed as the sum of the questions

(0 – 6 points per question) and divided by the number of questions. The scores were categorized as no (0 – < 1.5), moderate (1.5 – < 3.5), and severe (3.5 – 6.0).

Despite each of the three components of burnout being studied separately (III–V), a composite indicator of the burnout syndrome introduced by Kalimo et al. (2003) was used in publications III and IV and when the prevalence of physicians' burnout was determined by gender, main employment, position, and speciality (not included in the original publications).

In the studies by Kalimo and Toppinen (1997) and Kalimo et al. (2003), data based on a nationwide representative sample of the Finnish working population (n = 3330) had been used for the construction of the weighted burnout sum score for each dimension (0.40 x Exhaustion + 0.30 x Cynicism + 0.30 x Reduced Professional Efficacy) (Kalimo & Toppinen 1997; Kalimo et al. 2003). The participants were categorized into three groups on the basis of their syndrome score: no burnout (scores 0 – < 1.5), some burnout symptoms (scores 1.5 – < 3.5), and serious burnout (scores 3.5 – 6.0).

In the categorization, the symptoms in the group "no burnout" were experienced, on average, a few times a year or never, in the group "some burnout symptoms" (or moderate) the symptoms occurred a few times a month or nearly weekly, and in the group "serious burnout" (or severe) they were present several times a week or daily.

4.2.4 Depression, mental disorders and suicidal thoughts (III)

Depression was assessed by asking the respondents "Has depression bothered you during the last year and, if 'yes', to what extent?" ("never or rarely", "sometimes", "quite often", "often or continuously"). Depression was not asked in a question of its own; instead, it was included as a single item in a list of 23 different kinds of symptoms. The presence of mental disorders was studied by asking "During the last year, have you had a mental disorder?" ("yes" or "no"). This question also contained other items – altogether a list of 18 diseases. Thoughts of suicide were probed as in a question of its own by asking "Have you ever seriously considered suicide or made plans to commit suicide?" ("Never", "I have thought about suicide", "I have seriously planned suicide" or "I have attempted suicide").

4.2.5 Reasons for stress (V)

The reasons for stress were asked with the question "What is the greatest cause of stress for you?'', including six response alternatives (work, family, combining work and family, health, economic situation, and some other reason, as an open-ended alternative). The respondents were asked to choose only one alternative as the commonest cause of stress for themselves.

4.2.6 Compromises between family and work (V)

Compromises between family and work were asked about in five questions, and the respondents were asked if they had made conscious compromises for work or family in situations when it was difficult to combine work and family ("yes" or "no''). The questions were "Have you limited the number of children because of your work?", "Have you delayed having children because of your work?", "Have you given up postgraduate or continuing medical education because of your family?", "Have you worked part-time because of your family?", "Have you given up a job because of your spouse's need to move?"

4.3. Mailing process and data coding

The Finnish Medical Association sent the questionnaires. The respondents returned the filled out questionnaires directly to the Finnish Institute of Occupational Health, where the codes on the envelopes were recorded and the data on the questionnaires were checked and saved. To ensure anonymity, there were no identification codes on the questionnaire itself. Instead, the envelopes were numbered in order to control the posting process. The codes of the returned envelopes were sent to the Finnish Medical Association. From the Finnish Medical Association one reminder was sent to non-respondents five weeks after the first posting. The researchers received only the completed questionnaires and thus could not identify individual respondents.

Most answers in the questionnaire were bar coded. Participants were asked to circle the number of the right answer in front of the alternative. The bar codes were read optically by a scanner pen. If a question was not structured or otherwise optically readable, it was coded manually. The maximum and minimum of the numbers were included in the computer programme to reduce mistakes in the manual coding. The

respondents completed the questionnaires well. Approximately fewer than 1% of the single questions were unanswered. Age was unanswered by 2% of the respondents.

4.4 Statistical analyses

The statistical analyses were carried out using the SAS program (versions 6.11 and 6.12; SAS Institute Inc., Cary, NC) (I-III) or the SPSS for Windows 11.0 software package (SPSS Inc, Chicago, IL, USA) (IV-V, and for data not in the original publications). They included the Mantel-Haenszel test (I,II), the *z* test for proportions (I,II), an analysis of variance (I), the *z* test for means (I), chi-square tests (III,IV), and logistic regression analyses (III–V). For the logistic regression models, the dichotomized variables are presented in the original publications, and regarding publication IV also in Table 8.

In publication I, since many statistical comparisons were made, statistical significance was determined as at $p < 0.01$ and $p < 0.001$, and in the other publications $p < 0.05$, $p < 0.01$, and $p < 0.001$ were used. The confidence interval (CI) was set at 95%. If a physician had more than one specialty, he or she was included in the analyses according to the specialty in which he or she was practising at the time of the response.

Table 8. Independent variables used in the logistic regression models for the study of factors associated with young physicians' burnout (publication IV, in Finnish)

Variables	Dichotomized classes
Professional competence	1. Perceived need for continuing medical education to be able to carry out duties 2. Suitable professional competence to carry out duties or skills for even more demanding work
Job commitment	1. Too high 2. Suitable or too low
Possibility to influence what belongs to worktasks	1. Not at all, a little 2. Much, quite a lot
Possibility to influence the order in which work is done	1. Not at all, a little 2. Much, quite a lot
Possibility to influence utilization of workhours	1. Not at all, a little 2. Much, quite a lot
Possibility to influence workpace	1. Not at all, a little 2. Much, quite a lot
Possibility to influence how work duties are shared between people	1. Not at all, a little 2. Much, quite a lot
Possibility to influence the choice of who one works with	1. Not at all, a little 2. Much, quite a lot
Satisfaction with the choice of profession (= if possible, the physician would exchange his or her career for another of the same salary)	1. Possibly, immediately 2. Not in any case
Thoughts about legal action	1. Sometimes, often, or nearly always think about legal action 2. Do not usually think about legal action
Possibility to consult a colleague in the work unit	1. Too little or no possibilities 2. Enough possibilities
Threat or violence during the past 12 months	1. Threat or actual violence 2. No incidences of either

5. RESULTS

5.1 Self-reported health status, sickness absence and the use of health services among Finnish physicians (I)

5.1.1 Perceived health

A total of 76% of the male physicians and 79% of the female physicians assessed their own health as good or fairly good. After adjustment for age, no significant difference in the self-assessment of subjective health as good or fairly good was found between the male and female physicians or between the male physicians and other male employees (72%). The female physicians assessed their health as good or fairly good significantly more often than the other female employees did (69%, $p < 0.001$) (I, Table 2).

Among the specialists – one specialty compared with other specialties – child psychiatrists (61%, $p = 0.007$) and psychiatrists (61%, $p = 0.001$) assessed their health as good or fairly good the least often, and internists (89%, $p = 0.001$) reported that their health was good or fairly good the most often.

5.1.2 Prevalence of self-reported diseases

The most commonly reported diseases during the past 12 months affected the back (22% of men, 18% of women) or the digestive system (19% of men, 16% of women) among both genders of physicians. The men reported hypertension more often than the women, while the women reported thyroid dysfunction and neurological conditions significantly more often than the men (I, Table 3).

Compared with the total employed population, the male physicians reported all comparable diseases at least as often as other male employees. The female physicians reported hypertension and chronic bronchitis significantly less often than other female employees (I, Table 3).

Both the male and female physicians reported a mental disorder, chronic eczema, a disease of the digestive system, and back problems significantly more often than other employees of the same gender, and the male physicians also reported asthma more often (I, Table 3).

5.1.3 Smoking and body mass index (not included in the original publication)

The proportion of regular smokers was 8.7% among the male physicians and 4.2% among the females. A total of 54.6% of the men and 75.3% of the women had never smoked, and 15.6% of the men and 7.8% of the women smoked occasionally. The body mass index (BMI) was 25 kg/m^2 or over for 42.0% of the men and 21.9% of the women and 30 kg/m^2 or over for 5.7% of the men and 4.1% of the women.

5.1.4 Self-treatment of diseases

Diseases or medical conditions that were more often self-treated than treated by another physician were chronic eczema (85%), chronic bronchitis or emphysema (84%), chronic urinary tract infection or chronic pyelonephritis (82%), back problems (80%), arthrosis (79%), diseases of the digestive system (76%), asthma (68%), mental disorders (66%), hypertension (62%), and diabetes (51%) (I, Table 4). The male physicians self-treated diseases of the digestive system and back more often than the female physicians, but both the men and the women self-treated these diseases at a high rate (I, Table 4).

Obstetric disorders (7%), rheumatic arthritis (25%), and heart diseases (coronary disease, myocardial infarction, heart insufficiency) (34%) were the least self-treated conditions.

5.1.5 Sickness absence

Fewer male (33%) than female physicians (44%) had been on sick leave during the past 12 months ($p < 0.001$) (I, Table 5). However, for those who had been on sick leave, there was no significant difference in the number of sick leave days between the men and women (I, Table 6). The younger physicians took sick leave more often than the older ones, but, when the older physicians took sick leave, it was more likely to be longer (I, Tables 5 and 6).

Fewer physicians had been on sick leave during the last year than the total employed population of the same gender (57% of the men and 66% of the women) (I, Table 5). When only those who had been on sick leave were included, no significant difference was found in the number of sick leave days between the physicians and other employees (I, Table 6).

Among the specialists, anaesthetists (57%, p = 0.001) and psychiatrists (56%, p = 0.001) had been on sick leave during the last year the most often and gynaecologists (21%, p = 0.001) the least often when compared with other specialists. For the duration of sick leave, there were no significant differences between the specialist groups.

Full-time private practitioners took sick leave less often than other physicians (20% versus 40%, p = 0.001), but, when they took sick leave, the length of absence was significantly longer (36 versus 11 days, p < 0.001).

5.1.6 Visits to a physician's surgery

Fewer male (44%) than female physicians (69%) had visited a physician's surgery during the last year (p < 0.001) (I, Table 8). When the physicians were compared with the total employed population, both the male and female physicians had visited a physician's surgery during the last year less often than other employees of the same gender (77% and 88%, respectively) (I, Table 8). The child psychiatrists (84%, p = 0.006) and psychiatrists (72%, p = 0.001) had visited a physician's surgery more than the other specialists.

5.2 Personal medication use among Finnish physicians in 1986 and 1997 (II)

The proportion of physicians who often or regularly reported using any medication increased significantly from 1986 to 1997 (men 27.8% versus 44.3%, p = 0.001; women 28.8% versus 48.6%, p = 0.001). The increase was significant in the age groups under 51 years of age (II, Table 1). The commonest reasons for medication were pain, mental disorders or insomnia, and gastrointestinal diseases and symptoms, in both 1986 and 1997. Medication for pain and gastrointestinal symptoms and diseases increased significantly among both genders from 1986 to 1997, but medication for mental disorders and insomnia did not. Gastrointestinal diseases (74%), asthma (63%), and mental disorders (62%) were the most commonly self-medicated diseases in 1997, whereas cardiovascular diseases (25%) were the least self-medicated conditions (II, Table 2).

5.3 Burnout among Finnish physicians

5.3.1 Burnout by gender, main employment, position and specialty (not included in the original publications)

A total of 43.8% of the male physicians and 50.5% of the female physicians experienced severe or moderate burnout, and there was no gender difference when the results were age-adjusted (Table 9). The women were more likely than the men to experience severe or moderate exhaustion and reduced personal accomplishment, and less likely than the men to experience cynicism.

The physicians working in municipal health centres and as municipal health centre physicians were more likely than other physicians to experience moderate or severe burnout, and physicians working as full-time private practitioners or in the field of teaching and research were less likely to experience such burnout (Tables 10 and 11). Among the specialists, the radiologists and psychiatrists were more likely to experience moderate or severe burnout than the other specialists, and the ophthalmologists and paediatricians were the least likely to suffer from such burnout (Table 12). Gender and age were controlled in the analyses, and type of employment was also controlled with respect to specialists' burnout (Table 12). Type of employment (private practice) explained some of the results for the ophthalmologists, but not the results for the paediatricians, radiologists, or psychiatrists.

When each of the three components of burnout was investigated separately, the radiologists and psychiatrists differed from each other (Tables 13 and 14). The radiologists were more likely than the other specialists to experience cynicism and reduced personal accomplishment, but not emotional exhaustion, while the psychiatrists were more likely to experience emotional exhaustion and cynicism, but not reduced personal accomplishment.

Table 9. Proportions of Finnish physicians experiencing the dimensions of burnout and the three-dimensional burnout syndrome by gender in 1997

	Men		Women		Unadjusted p-value[a]
	N	%	N	%	
Emotional exhaustion					< 0.001
No	702	46.2	530	33.3	
Moderate	638	41.9	820	51.5	
Severe	181	11.9	243	15.3	
All	1521	100.0	1593	100.0	
Risk[b] of females (vs. males) for moderate or severe emotional exhaustion: OR=1.5 (95% CI 1.3–1.8)***					
Cynicism					< 0.001
No	972	64.9	1112	70.0	
Moderate	411	27.4	401	25.3	
Severe	115	7.7	75	4.7	
All	1498	100.0	1588	100.0	
Risk[b] of females (vs. males) for moderate or severe cynicism: OR= 0.6 (95% CI 0.5–0.7)***					
Reduced personal accomplishment					0.033
No	959	67.7	937	63.3	
Moderate	425	30.0	496	33.5	
Severe	33	2.3	47	3.2	
All	1417	100.0	1480	100.0	
Risk[b] of females (vs. males) for moderate or severe reduced personal accomplishment: OR=1.2 (95% CI 1.0–1.4)*					
Burnout syndrome					0.001
No	787	56.2	717	49.5	
Moderate	572	40.9	696	48.1	
Severe	41	2.9	35	2.4	
All	1400	100.0	1448	100.0	
Risk[b] of females (vs. males) for moderate or severe burnout syndrome: OR=1.1 (95% CI 1.0–1.3)					

[a] Pearson chi-square.
[b] Logistic regression model: dimensions of burnout or the burnout syndrome (no versus moderate or severe) as dependent variables, female gender (versus male gender) as an independent variable, and age on a continuous scale as a covariate.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 10. Proportions of Finnish physicians experiencing moderate or severe burnout by main employment in 1997 (three-dimensional burnout syndrome)

	Type of employment		All other types		Unadjusted p-value[a]	Type of employment OR (95% CI) Adjusted for age and gender[b]
	N	%	N	%		
Hospital	687	49.2	657	45.2	0.34	1.1 (1.0–1.3)
Municipal health centre	408	53.1	936	45.0	< 0.001	1.3 (1.1–1.5)**
Private practice	51	23.5	1293	49.1	< 0.001	0.4 (0.3–0.5)***
Teaching, research	43	36.4	1301	47.7	0.017	0.6 (0.4–0.9)*
Occupational health, administration, organisations, etc.	155	44.4	1189	47.6	0.267	1.0 (0.8–1.2)

[a] Pearson chi-square.
[b] Logistic regression model: no burnout versus moderate or severe burnout as the dependent variable, type of employment versus all other types and gender as independent variables and age on a continuous scale as a covariate.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 11. Proportions of Finnish physicians experiencing moderate or severe burnout by position in 1997 (three-dimensional burnout syndrome)

	Position		All other positions		Unadjusted p-value[a]	Position OR (95% CI) Adjusted for age and gender[b]
	N	%	N	%		
Chief physician or professor	269	42.8	1066	48.5	0.012	1.1 (0.9–1.4)
Senior ward physician, specialist	331	48.2	1004	46.9	0.550	1.1 (0.9–1.3)
Senior house officer / resident	255	56.0	1080	45.5	< 0.001	1.1 (0.9–1.3)
Municipal health centre physician	326	54.3	1009	45.3	< 0.001	1.3 (1.1–1.6)**
Private practitioner, clinical lecturer, occupational health physician, etc.	154	33.6	1167	50.1	< 0.001	0.5 (0.4–0.7)***

[a] Pearson chi-square.
[b] Logistic regression model: no burnout versus moderate or severe burnout as the dependent variable, position versus all other positions and gender as independent variables, and age on a continuous scale as a covariate.
** $p < 0.01$, *** $p < 0.001$.

Table 12. Proportions of Finnish specialists experiencing moderate or severe burnout by specialty in 1997 (three-dimensional burnout syndrome)

	Specialty		All other specialties		Unadjusted p-value[a]	Specialty OR (95% CI) Adjusted for age and gender	Specialty OR (95% CI) Adjusted for age, gender and type of practice[b]
	N	%	N	%			
Anaesthesiology	50	50.5	679	42.8	0.135	1.4 (0.9–2.0)	1.2 (0.8–1.9)
Child psychiatry	24	58.5	705	42.9	0.046	1.8 (1.0–3.5)	1.7 (0.9–3.3)
General practice	153	46.6	576	42.5	0.172	1.1 (0.9–1.4)	1.1 (0.8–1.4)
Internal medicine	80	42.3	649	43.4	0.777	1.0 (0.7–1.3)	0.9 (0.7–1.3)
Neurology	20	47.6	709	43.2	0.566	1.1 (0.6–2.1)	1.1 (0.6–2.1)
Obstetrics and gynaecology	43	38.1	686	43.7	0.245	0.8 (0.5–1.2)	0.9 (0.6–1.4)
Occupational health	32	34.8	697	43.8	0.090	0.7 (0.5–1.1)	0.8 (0.5–1.2)
Ophthalmology	14	23.3	715	44.0	0.001	0.4 (0.2–0.7)**	0.5 (0.3–1.0)*
Otorhinolaryngology	16	33.3	713	43.6	0.158	0.7 (0.4–1.2)	0.7 (0.4–1.4)
Paediatrics	29	31.9	700	43.9	0.024	0.6 (0.4–0.9)*	0.6 (0.4–0.9)*
Psychiatry	82	54.7	647	42.2	0.003	1.6 (1.2–2.3)**	1.6 (1.1–2.3)**
Radiology	52	67.5	677	42.1	< 0.001	2.9 (1.8–4.7)***	2.9 (1.8–4.8)***
Surgery	57	36.8	672	44.0	0.086	0.8 (0.6–1.1)	0.8 (0.5–1.1)
Other specialties (< 40 respondents in 1 specialty)	77	38.7	652	43.9	0.163	0.8 (0.6–1.1)	0.8 (0.6–1.1)

[a] Pearson chi-square.

[b] Speciality odds ratio, OR (95% CI) adjusted for age, gender and type of practice (private practice versus all other types of employment)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 13. Proportions of radiologists experiencing the dimensions of burnout and the three-dimensional burnout syndrome compared with the other specialists in Finland in 1997

	Radiology		All other specialties		Unadjusted p-value[a]
	N	%	N	%	
Emotional exhaustion					0.233
No	31	36.0	753	43.0	
Moderate	40	46.5	788	45.0	
Severe	15	17.4	211	12.0	
All	86	100.0	1752	100.0	
Risk[b] of radiology (vs. other specialties) for moderate or severe emotional exhaustion: 1.4 (95% CI 0.9–2.1)					
Cynicism					0.003
No	51	60.0	1294	74.3	
Moderate	25	29.4	375	21.5	
Severe	9	10.6	73	4.2	
All	85	100.0	1742	100.0	
Risk[b] of radiology (vs. other specialties) for moderate or severe cynicism: 1.9 (95% CI 1.2–3.1)**					
Reduced personal accomplishment					< 0.001
No	28	35.9	1105	67.4	
Moderate	44	56.4	497	30.3	
Severe	6	7.7	38	2.3	
All	78	100.0	1640	100.0	
Risk[b] of radiology (vs. other specialties) for moderate or severe reduced personal accomplishment: 3.7 (95% CI 2.3–5.9)***					
Burnout syndrome					< 0.001
No	25	32.5	930	57.9	
Moderate	49	63.6	639	39.8	
Severe	3	3.9	38	2.4	
All	77	100.0	1607	100.0	
Risk[b] of radiology (vs. other specialties) for moderate or severe burnout syndrome: 2.9 (95% CI 1.8–4.7)***					

[a] Pearson chi-square.
[b] Logistic regression model: dimensions of burnout and the burnout syndrome (no versus moderate or severe) as dependent variables, radiology versus all other specialties and gender as independent variables, and age on a continuous scale as a covariate.
** $p < 0.01$, *** $p < 0.001$.

Table 14. Proportions of psychiatrists experiencing the dimensions of burnout and the three-dimensional burnout syndrome compared with the other specialists in Finland in 1997

	Psychiatry		All other specialties		Unadjusted p-value[a]
	N	%	N	%	
Emotional exhaustion					< 0.001
No	45	28.0	739	44.1	
Moderate	78	48.4	750	44.7	
Severe	38	23.6	188	11.2	
All	161	100.0	1677	100.0	
Risk[b] of psychiatry (vs. other specialties) for moderate or severe emotional exhaustion: 2.0 (95% CI 1.4–2.8)***					
Cynicism					0.096
No	108	66.7	1237	74.3	
Moderate	46	28.4	354	21.3	
Severe	8	4.9	749	4.4	
All	162	100.0	2340	100.0	
Risk[b] of psychiatry (vs. other specialties) for moderate or severe cynicism: 1.5 (95% CI 1.1–2.2)*					
Reduced personal accomplishment					0.495
No	106	68.8	1027	65.7	
Moderate	46	29.9	495	31.6	
Severe	2	1.3	42	2.7	
All	154	100.0	1564	100.0	
Risk[b] of psychiatry (vs. other specialties) for moderate or severe reduced personal accomplishment: 0.9 (95% CI 0.6–1.2)					
Burnout syndrome					0.010
No	68	45.3	887	57.8	
Moderate	76	50.7	612	39.9	
Severe	6	4.0	35	2.3	
All	150	100.0	1534	100.0	
Risk[b] of psychiatry (vs. other specialties) for moderate or severe burnout syndrome: 1.6 (95% CI 1.2–2.3)**					

[a] Pearson chi-square.
[b] Logistic regression model: dimensions of burnout and the burnout syndrome (no versus moderate or severe) as dependent variables, psychiatry versus all other specialties and gender as independent variables, and age on a continuous scale as a covariate.
** $p < 0.01$, *** $p < 0.001$.

5.3.2 Burnout and self-perceived health among psychiatrists and child psychiatrists (III)

The psychiatrists and child psychiatrists reported emotional exhaustion, threat of severe burnout, depression, mental disorder, and threat of mental ill health more often than all the other physicians did (Table 15; III, Table 3). The outpatient psychiatrists reported moderate or severe burnout significantly more often than all the other physicians (69% versus 47%, $p = 0.001$).

Although the psychiatrists (37.1%) expressed more suicidal thoughts than the child psychiatrists (22.9%) and other physicians (22.3%), the child psychiatrists (8.3%) had the highest prevalence of attempted suicide among all the physicians (III, Table 3). Moreover, the psychiatrists (14.7%) and child psychiatrists (12.8%) reported regular use of psychotropic medication because of symptoms of a mental disorder or insomnia significantly more often than all the other physicians (8.5%).

There were no significant differences in the level of job satisfaction between the psychiatrists, child psychiatrists, and other physicians (Table 15). However, the psychiatrists expressed a high level of life satisfaction significantly less often than the other physicians.

The psychiatrists (14.7%) and child psychiatrists (29.2%) reported frequent visits (more than three visits a year) to a physician's surgery more often than the other physicians (8.3%, $p = 0.001$). In addition, the psychiatrists (49.1%) and child psychiatrists (65.9%) had visited an occupational health unit due to illness during the previous 3 years more often than the other physicians (16.1%, $p = 0.001$).

In the stepwise logistic regression models, lack of possibilities to consult a colleague, lack of work supervision, experience or threat of violence, and self-reported depression were significantly associated both with emotional exhaustion and with the three-dimensional burnout syndrome among the physicians working in the field of psychiatry (III, Table 4). In addition, a high level of job commitment was significantly associated with the exhaustion dimension.

Table 15. Comparison of burnout measures and job and life satisfaction between psychiatrists (n=170), child psychiatrists (n=48), and other physicians (n=3095) in Finland in 1997

Characteristic	Categories	Psychiatrists %	Child psychiatrists %	Other physicians %
Emotional exhaustion	Moderate or severe	72.4[a]	81.3[a]	59.5
Burnout syndrome (three dimensional)	Moderate or severe	54.6	57.1	46.6
Experience or threat of severe burnout	Think of it sometimes or it is a clear threat	88.8[a]	95.8[a]	72.5
Job satisfaction	Often or daily	83.5	83.3	84.0
Life satisfaction	High	13.8[a]	18.8	19.9

[a] The proportions differ significantly at the 95% CI (psychiatrists and child psychiatrists were compared separately with other physicians).

5.3.3 Young physicians' burnout (IV, in Finnish)

In this chapter the term "young physicians" refers to physicians who had graduated less than six years earlier. Altogether 38% of the young female physicians and 44% of the young male physicians were free of burnout symptoms (three-dimensional burnout syndrome), and 3% experienced severe burnout without significant gender differences (Table 16). The prevalence of the severe or moderate exhaustion component of burnout was as high as 73% among the young women and 63% among the young men ($p = 0.029$), and the prevalence of cynicism was 50% and 65%, respectively ($p = 0.002$). The prevalence of reduced personal accomplishment was also higher among the young women than among the young men (38% versus 27%, $p = 0.016$).

The burnout syndrome and its dimensions of exhaustion and cynicism were commoner among the young physicians than among the older ones for both genders (Table 16). Among the older physicians, women also experienced more exhaustion and less cynicism than the men ($p < 0.001$), but there was no significant gender difference in the prevalence of reduced personal accomplishment ($p = 0.057$).

In the logistic regression analyses, the following self-perceived factors were significantly associated with the burnout syndrome or its dimensions among the young physicians: insufficient professional competence, too high a commitment to work (women), dissatisfaction with choice of profession, lack of possibilities to influence one's own work, thoughts about legal action, threat of violence (men), and lack of possibilities to consult a colleague in the work unit (women) (Tables 17 and 18).

Table16. Proportions of Finnish physicians experiencing the dimensions of burnout and the three-dimensional burnout syndrome by gender and time from graduation in 1997 (IV, in Finnish)

	Men					Women				
	Time from graduation					Time from graduation				
	< 6 years		≥ 6 years			< 6 years		≥ 6 years		
	N	%	N	%	p-value	N	%	N	%	p-value
Emotional exhaustion					0.012					0.011
No	61	36.7	659	47.0		84	27.1	450	34.7	
Moderate	82	49.4	578	41.3		178	57.4	652	50.2	
Severe	23	13.9	164	11.7		48	15.5	196	15.1	
Total	166	100.0	1401	100.0		310	100.0	1298	100.0	
Cynicism					< 0.001					<0.001
No	57	35.0	946	68.5		152	49.7	971	74.8	
Moderate	80	49.1	344	24.9		122	39.9	283	21.8	
Severe	26	16.0	91	6.6		32	10.5	44	3.4	
Total	163	100.0	1381	100.0		306	100.0	1298	100.0	
Reduced personal accomplishment					0.162					0.470
No	114	73.1	881	67.6		172	61.6	779	64.0	
Moderate	41	26.3	390	29.9		97	34.8	401	32.9	
Severe	1	0.6	33	2.5		10	3.6	38	3.1	
Total	156	100.0	1304	100.0		279	100.0	1218	100.0	
Burnout syndrome					0.001					<0.001
No	68	44.2	742	57.6		103	37.6	623	52.4	
Moderate	82	53.2	508	39.4		163	59.5	538	45.2	
Severe	4	2.6	38	3.0		8	2.9	28	2.4	
Total	154	100.0	1288	100.0		274	100.0	1189	100.0	

[a] Pearson chi-square.

Table 17. Factors associated with young male physicians' burnout in Finland in 1997 (less than 6 years since graduation) (IV, in Finnish)

	OR	95% CI
Factors associated with emotional exhaustion[a]		
Insufficient professional competence	6.2	2.7–14.1
Factors associated with cynicism[a]		
Insufficient professional competence	2.2	1.0–4.8
Lack of possibility to influence how work duties are shared between people	3.3	1.4–7.6
Thoughts about legal action	3.3	1.6–6.8
Threat of violence	2.4	1.1–5.1
Factors associated with reduced personal accomplishment[a]		
Dissatisfaction with choice of profession	2.4	1.1–5.1
Factors associated with the three-dimensional burnout syndrome[a]		
Insufficient professional competence	2.5	1.2–5.3
Lack of possibility to influence how work duties are shared between people	3.1	1.3–7.4
Threat of violence	2.1	1.0–4.4

[a] Independent variables in the stepwise logistic regression models: insufficient professional competence, too high a job commitment, lack of possibility to influence what belongs to the worktasks, lack of possibility to influence the order in which the work is done, lack of possibility to influence the utilization of workhours, lack of possibility to influence workpace, lack of possibility to influence how work duties are shared between people, lack of possibility to influence the choice of who one works with, dissatisfaction with choice of profession, thoughts about legal action, lack of possibility to consult a colleague in the work unit, threat of violence

Table 18. Factors associated with young female physicians' burnout (less than 6 years since graduation) (IV, in Finnish)

	OR	95% CI
Factors associated with emotional exhaustion[a]		
Insufficient professional competence	1.9	1.1–3.5
Too high a job commitment	5.6	2.7–11.7
Lack of possibility to influence utilization of workhours	2.2	1.2–4.0
Dissatisfaction with choice of profession	1.9	1.1–3.5
Thoughts about legal action	2.2	1.2–4.0
Lack of possibility to consult a colleague	2.3	1.2–4.5
Factors associated with cynicism[a]		
Dissatisfaction with choice of profession	2.8	1.7–4.5
Thoughts about legal action	1.8	1.1–3.0
Factors associated with reduced personal accomplishment[a]		
Insufficient professional competence	2.7	1.6–4.6
Dissatisfaction with choice of profession	2.2	1.3–3.7
Factors associated with the three-dimensional burnout syndrome[a]		
Insufficient professional competence	2.5	1.4–4.4
Too high a job commitment	2.9	1.6–5.3
Lack of possibility to influence how work duties are shared between people	3.6	1.4–9.3
Dissatisfaction with choice of profession	2.2	1.2–3.8
Thoughts about legal action	1.9	1.1–3.3

[a] Independent variables in the stepwise logistic regression models: insufficient professional competence, too high a job commitment, lack of possibility to influence what belongs to the worktasks, lack of possibility to influence the order in which the work is done, lack of possibility to influence the utilization of workhours, lack of possibility to influence workpace, lack of possibility to influence how work duties are shared between people, lack of possibility to influence the choice of who one works with, dissatisfaction with choice of profession, thoughts about legal action, lack of possibility to consult a colleague in the work unit, threat of violence

5.4 Finnish physicians combining work and family (V)

The female physicians were married or cohabiting (78%) and had children (73%) less often than the male physicians (91% and 87%, respectively; V, Table 1).

Work was the commonest reported reason for stress for both the male and female physicians (V, Table 2). If the physicians had children, combining work and family was the commonest reported cause of stress among the women, but work still remained the commonest reported cause of stress among the men. The women – with or without children – were less likely than the men to report that their economic situation caused the greatest stress.

The female physicians reported that they had made compromises between family and work more often than the male physicians. The women had limited the number of children (21% vs. 7%, $p < 0.001$), delayed having children (28% vs. 14%, $p < 0.001$), given up postgraduate or continuing medical education (50% vs. 32%, $p < 0.001$), worked part-time because of family (29% vs. 7%, $p < 0.001$), and given up a job because of their spouse's need to move (21% vs. 9%, $p < 0.001$) more often than the men.

The female physicians – with or without children – were more likely than the male physicians to experience severe or moderate exhaustion and less likely than the male physicians to experience cynicism as components of burnout (V, Table 3).

Among both genders of physicians, having children was associated with less cynicism and reduced personal accomplishment, but children did not affect exhaustion (V, Table 4).

6. DISCUSSION

6.1 General discussion

The difference in self-reported health between the total employed population and physicians did not seem to be high in Finland, but the threshold for seeking formal help and taking sick leave was higher for physicians and self-treatment was common. Furthermore, the prevalence of burnout varied a great deal between different physician groups. Young physicians and municipal health centre physicians were more likely than other physicians to experience burnout.

This survey was carried out in 1997. The results could be different today. The results, however, provide some background for the situation today, for instance, with respect to physicians' choices of employment today. For example, in 1997, fewer physician vacancies were without employees than today in public health care. Since 1997, many Finnish physicians have left municipal health centres and have gone to work as full-time private practitioners (Kumpusalo et al. 2002; Vänskä 2003). Approximately 12% of the vacancies in Finnish municipal health centres were without employees in 2003; in some parts of Finland the proportion was nearly 30% (Finnish Medical Association 2004b). Furthermore, after 1997 many companies selling health services to municipal health centres have been set up, and especially young physicians have joined them. In October 2004, 6% of the vacancies in health centres were filled by outside companies (Virtanen et al. 2004). Young physicians have possibly chosen this type of employment contract so that they can have more influence on their working conditions, for instance, on workhours, as employees of companies rather than as employees of municipal health centres (Pälve 2003). In the present study lack of possibilities to influence one's own work was one of the factors associated with young physicians' burnout in 1997. This study also introduces several other work-related factors that should be taken into account in the implementation of a healthy professional work environment for physicians.

Since the present study, some changes have also taken place in the supply of health services for physicians. In 1997, a "confidential network for physicians" was arranged to make it easier for physicians to find help in cases in which they do not want to use formal health services (Kujala 1997). Too, one can hope that self-treatment is not as common among physicians today as it was in 1997.

Furthermore, the proportion of female physicians has increased since 1997. More than half of working-aged physicians are already women. According to the present study, in 1997, combining work and family was a common source of stress especially for female physicians, and female physicians had made compromises between family and work more often than their male colleagues. As the proportion of female physicians is still increasing, issues concerning gender and work–family balance have become even more important among Finnish physicians since 1997.

6.2 Methodological considerations

The strength of this study is its nationwide design and the inclusion of all specialities and types of employment. The response rate was highly acceptable (74%). A total of 3313 randomly selected physicians responded. These study characteristics make it possible to analyse different physician groups separately and compare them with each other.

The use of the same questions regarding health status and the use of health services as those used in national studies of the Finnish adult population makes the comparisons between physicians and the employed general population possible. The exclusion of unemployed and retired persons from the data of national health studies makes the comparison between physicians and other employees valid when employed people are being focused on.

Anonymity was ensured in that the Finnish Medical Association sent the questionnaires, but they were returned directly to the Finnish Institute of Occupational Health without any identification code in the questionnaire.

The use of the MBI, the most commonly used measure of burnout, was also an advantage. The MBI measures each component of burnout, however, by a separate sub-scale. The use of a composite syndrome indicator based on the three components of burnout was another advantage.

Despite these strengths, some caution is needed in the interpretation of the results. The cross-sectional design of the study limits the ability to draw inferences about causal pathways. The simultaneous self-reporting of working conditions and ill-health may also have affected the results. For example, burned-out physicians can experience and report their working conditions as being worse than they are. We do not know either if

those who responded differ from those who did not. There is a risk that those who felt that they had no problems failed to participate and those with problems responded more actively. On the other hand, some topics, for instance, burnout, depression, and suicidal behaviour, can be considered socially undesirable, even as a topic of an anonymous questionnaire. Thus those who have problems may also have failed to participate.

The questions on health status were based on self-report and judgement by the physicians themselves. However, the reliability of self-reports of health is high (Martikainen et al. 1999). It can also be assumed that physicians have more knowledge of self-reporting health issues than most other people do. This knowledge does not, however, remove the risk of under- or over-reporting.

In a comparison of the health status of physicians – for instance, the rates of diseases – with that of other employees, some questions arise. In health surveys of the general Finnish population, the diseases of interest are usually limited to those diagnosed or treated by physicians. When studying physicians, one must also include the diseases diagnosed or treated by physicians themselves. It is not known if this difference affects the results of physicians – increasing or decreasing the prevalence of self-reported diseases. Furthermore, for some medical conditions, the criteria are not exact, and in this study the severity of the disease was not determined. For example, mental disorders, back problems, and diseases of the digestive system, all diseases that physicians report more often than other employees, include a great variation of medical conditions. The profession may also influence the self-assessment of perceived health.

Burnout is a multi-dimensional problem, and any single factor does not explain it. Although several variables were included in the analyses to explain burnout, others could have been added – both individual and organizational. Moreover, the non-response to some of the 22 burnout items made it impossible to compute a composite syndrome indicator, and, therefore, the number of respondents included in these analyses was smaller. However, the large sample size and a good response rate minimize the effect of this problem on the results.

6.3 Health of physicians

6.3.1 Self-reported health status

Socioeconomic status is an important determinant of mortality and morbidity (Lahelma & Valkonen 1990; Kunst et al. 2005). Physicians belong to the upper social class whose mortality and morbidity are lower than those of the lower social classes. Physicians, however, have an increased risk of suicide (Lindeman 1997; Schernhammer et al. 2004), and depression is common – even more prevalent – among physicians than among others (Tyssen 2001). In the present study, physicians also reported several other common diseases as often as or even more often than other employees. The more commonly reported diseases included mental disorders, back problems, diseases of the digestive system, chronic eczema, and, among the men, also asthma. Furthermore, the male physicians reported all other comparable diseases as often as other male employees, and they did not assess their health as being better than that of other male employees, whereas the female physicians rated their health as good or fairly good more often than other female employees did. Perceived health has been found to be a good health indicator (Martikainen et al. 1999). In a Norwegian sample, physicians assessed their general health better than that of persons with a lower level of education but not better than comparable university graduates (Stavem et al. 2001).

In the present study, as in many others from several countries (van Reek & Adriaanse 1991; Chambers 1992; Ohida et al. 2001), physicians smoked less than the general population. In Finland, 25% of male employees and 18% of female employees smoked daily in 1997 (Helakorpi et al. 1997) compared with 9% of the male physicians and 4% of the female physicians in the present study. Lower smoking rates have been suggested as contributing substantially to the low overall death rates among physicians (Carpenter et al. 1997). Furthermore, physicians seem to be overweight less often than other employees. In this study, the BMI was 25 kg/m^2 or over for 42% of the male physicians and 22% of the female physicians compared with 54% and 38% for other male and female employees, respectively, in Finland (Helakorpi et al. 1997).

The conclusions about physicians' self-reported health status compared with that of the total employed population must be tentative in this study. However, it seems that becoming and being a physician and knowing about the prevention and treatment of diseases does not seem to protect or make physicians resistant to diseases. Physicians

also get sick. However, many physicians express the idea that illness is inappropriate for physicians (McKevitt & Morgan 1997). It is also alarming that, in a Finnish study by Lindeman et al. (1997b), physicians who committed suicide had received more somatic diagnoses than other professionals and only a minority of the physicians had received only a mental diagnosis. It can still be asked, as Rimpelä et al. did in 1987, "Don't doctors benefit from their medical knowledge?" On the other hand, medical knowledge can also be the reason why it is so difficult for a physician to seek help and take the patient's role when he or she becomes sick. This aspect will be further discussed later.

6.3.2 Sickness absence

Sickness absence can be used as a global measure of health differentials between employees (Marmot et al. 1995; Kivimäki et al. 2003). However, among physicians the threshold for taking sick leave is high, and going to work does not necessarily indicate well-being (Waldron 1996; Baldwin et al. 1997; McKevitt et al. 1997; Rosvold & Bjertness 2001). There are both cultural and organizational factors that influence physicians' decisions not to take sick leave (McKevitt et al. 1997). According to the present results, staying away from work due to an illness also varies according to age, gender, type of employment, and specialty. In particular, older male physicians and private practitioners seldom take sick leave, but, when they do, the absence is more likely to be long. Also in a study by Kivimäki et al. (2001), short spells of sickness absence were inversely related to age among physicians, but for long spells the direction of the association was the opposite.

The Finnish sickness insurance system can explain some of the differences in the habit of taking sick leave between private practitioners and other physicians. Everyone who is a permanent resident in Finland is insured for sick leave by the Social Insurance Institution. However, a person must be on sick leave a total of 10 weekdays (the first day of illness and nine following weekdays) before insurance compensation begins. For employees, employers provide coverage from the first day, and there is no loss of income. Self-employed persons must wait the 10 weekdays before insurance compensation begins.

Also in a Norwegian study, working as a clinician outside a hospital was associated with a high threshold for taking sick leave and working when ill (Rosvold & Bjertness

2001). The researchers concluded that self-employed physicians may worry about economic loss during sick leave, but it is also difficult to find someone to take over for them.

6.3.3 Personal medication use

Self-medication among physicians is a worldwide phenomenon. It was a usual form of care also in this study. For instance, nearly two thirds of the mental disorders were self-medicated. Although physicians' self-treatment is criticized in many studies and suggestions on the medical care of physicians have been established (e.g., Osmond & Siegler 1977; Stoudemire & Rhoads 1983; Schneck 1998; Forsythe et al. 1999; Center et al. 2003), there does not seem to be a consensus among physicians about whether self-examination and self-medication is acceptable (Chambers 1993).

The proportion of physicians who personally used medication often or regularly increased considerably among Finnish physicians from 1986 to 1997 according to this study. This increase was the most obvious among those less than 51 years of age. More research is needed to explain why this increase in medication use has occurred. In contrast to physicians, the proportion of the total Finnish population using any prescription or non-prescription medicines did not increase between 1987 and 1996 (Arinen et al. 1998). The possible change in self-medication among physicians could not be determined in the present study because, in the study of 1986, the physicians were not asked whether they had treated themselves or had been treated by another physician.

Our study does not answer the question of whether a change in the personal use of medication by a physician leads to changes in his or her prescription habits. Or in a wider perspective – does physicians' personal health behaviour overall affect their clinical practice? According to studies from the United States, physicians' personal health behaviour has some effect on their clinical practice (Wells et al. 1984; Schwartz et al. 1991; Frank et al. 2000b).

6.3.4 Use of health services

In this study, as in studies from several countries, physicians' use of formal health services was low, and the threshold for seeking help was high (Pullen et al. 1995;

Wachtel et al. 1995; Forsythe et al. 1999; Rosvold & Bjertness 2002). Thus the number of formal consultations reveal only a little about physicians' health conditions. Furthermore, in the present study, the female physicians visited another physician's surgery during the last year far more often than the male physicians although there was no significant difference in the assessment of subjective health between the men and women.

In this study, obstetric disorders, rheumatic arthritis, and cardiovascular diseases were the least self-treated conditions. According to another study, self-treatment is less common for severe diseases (Ende et al. 1990). In a study by Davidson and Schattner (2003) most physicians believed it was acceptable to self-treat acute conditions (90%), but only a quarter of the respondents believed it was acceptable to self-treat chronic conditions. In the present study, self-treated diseases also included many chronic conditions, such as hypertension and diabetes that not only require medication, but also depend on lifestyle changes and monitoring for complications.

Recently, physicians' attitudes towards their own organized health care seem to be changing, however. The Finnish Medical Association asked the following question of all Finnish physicians in 2003: "If your health or work ability is threatened, whom would you contact primarily" (Vänskä 2003). As many as 13 044 physicians answered the question in 2003. The same question was also asked 12 years earlier in 1991 (n = 12 066) (Finnish Medical Association 1992). In both surveys, the commonest answer was a local specialist (38% in 1991 and 2003). The proportion of occupational health services, however, had increased from 8% to 28% and the proportion of a friend or a colleague at work decreased from 45% to 21%. Also in Norway, physicians would prefer to be treated by a physician with whom they do not have personal ties (Rosvold & Bjertness 2002).

In Finland, as also in other countries, physicians have traditionally used occupational health services very seldom (Waldron 1996; Baldwin et al. 1997; Töyry et al. 1998; Mäenpää 2000; Forsythe et al. 1999; Rosvold & Bjertness 2002). If physicians' attitudes towards their own health are really changing and physicians finally seem to be ready to become users of formal health services, occupational health units should be ready. Many personal, psychological and organizational factors influence the heath care of physicians (Christie & Ingstad 1996; McKevitt & Morgan 1997; Schneck 1998;

Center et al. 2003). For instance, physicians seeking help can find it difficult to accept their role as patients. In addition, the treating physicians can have problems with defining their role. An American consensus statement recommended transforming professional attitudes and changing institutional policies to encourage physicians to seek help (Center et al. 2003). They pointed out that, in the United States, barriers to physicians' seeking help can even be punitive, including discrimination in medical licensing, hospital privileges, and professional advancement.

Occupational health services for physicians must be well-known, accessible, and as confidential as for other employees. The preservation of confidentiality and privacy are important issues for physicians (Schneck 1998). It has been questioned whether physicians perceive local occupational health units as the appropriate confidential setting for consultations (Forsythe et al. 1999) – this is the case especially in small municipal health centres (Töyry et al. 1998). These issues and the possibility to create national guidelines or suggestions on how to arrange occupational health services for physicians have been discussed recently in Finland (Vehkasaari 2003). A "confidential network for physicians" was already arranged in 1997 to make it easier for physicians to find help in cases when they do not want to use formal health services (Kujala 1997). However, this network does not replace occupational health or other health services for physicians – instead the two complement each other.

6.3.5 Health of physicians by gender and specialty

One must be careful when interpreting differences in self-reported health status, the amount of sick leave, and the use of health services according to gender and specialty. When the threshold of seeking help is high among physicians in general, a higher consumption of health services by physicians in certain specialties may be considered "normal" when compared with that of the general population. Of course, the difference can also indicate that the health status differs in different physician groups.

In this study, female physicians differed from the male physicians, and the psychiatrists differed from the other specialists by using more health services (visits to a physician's surgery, laboratory tests) and by taking sick leaves more often. Among the Finnish general population, the trend towards women using more health services than men was the same although women's health is considered to be better than men's

(Halila 1998). An interesting finding in the present study was also that female physicians in general assess their health to be good or fairly good more often than other female employees. In the United States, female physicians have also reported having generally good health habits, and their health behaviour has been considered a useful standard for other women in the United States (Frank et al. 1998).

The present finding of psychiatrists' depression is in line with the results of other studies reporting more depression among psychiatrists than among other physicians (Deary et al. 1996; Firth-Cozens 1997; Frank and Dingle 1999; Frank et al. 2001). In the present study, psychiatrists and child psychiatrists also assessed their health as worse than other specialists did. Furthermore, the psychiatrists expressed more suicidal thoughts, and the child psychiatrists had a higher prevalence of attempted suicide than other physicians did. Reports about the risk of suicide among different specialties are, however, conflicting (Lindeman 1997; Hem 2004).

It is impossible here to state with certainty whether the criteria for self-reported depression and other mental disorders, or the threshold for self-reporting suicidal behaviour, differ between physicians working within the field of psychiatry and other physicians. A positive correlation between psychiatrists' self-reported depression and visits to a physician's surgery is, however, comforting in this study. At least psychiatrists and child psychiatrists seem to take some action to solve their problems. In this study, they had also visited their occupational health units more often than other physicians. Differences between specialties and genders will be further discussed later in conjunction with burnout.

6.4 Physicians' burnout

6.4.1 Work-related predictors especially among young physicians

In 1997, according to the MBI-GS, which is suitable for all occupations, up to 48% of the working-aged people in Finland suffered from moderate burnout, and 7% experienced severe burnout (Kalimo & Toppinen 1997). In the present study, the prevalence of burnout was lower than that for all physicians (45% and 3%, respectively), but clear differences were found between different physician groups by type of employment, specialty, and age. In the present study, burnout was commoner among young physicians than among older ones in 1997 in Finland. Among the Finnish

population in general, the result was rather the opposite – burnout appeared to be more of a risk later in one's career (Kalimo & Toppinen 1997).

In this study, the following self-perceived factors were associated with young physicians' burnout: insufficient professional competence, lack of possibilities to influence one's own work, too high a commitment to work, dissatisfaction with choice of profession, lack of possibilities to consult a colleague in the work unit, threat of legal action, and threat of violence.

Insufficient professional competence was associated with young physicians' burnout among both genders. According to other physician studies from Finland, physicians responded that many important areas in physicians' everyday work were inadequately dealt with in undergraduate medical education. These studies are known as "Junior Physician 88", "Physician 93" and "Physician 98" (Kataja 1989; Virjo 1995; Hyppölä 2000). In 1998, half of the respondents perceived that undergraduate education corresponded well with diagnostic skills (Hyppölä 2001; Hyppölä et al. 2002). In contrast, less than 10% of the respondents reported that their undergraduate education corresponded well to issues like administration and planning, collaboration with the social sector, and rehabilitation. In general, the respondents were more satisfied with their undergraduate hospital education than with their undergraduate health centre education although some faculties are already more community-oriented than others (Hyppölä et al. 2000; Hyppölä 2001). Although numerous changes have already taken place in undergraduate medical education during the 1990s in Finland, there is always a need for a continuous critical evaluation of education in every faculty (Hyppölä et al. 1996; Hyppölä 2001). Furthermore, in addition to undergraduate medical education, life-long learning is essential in medicine for keeping up with professional development. A perceived lack of opportunities for continuing medical education and for keeping up with professional developments was found to be significantly associated with job stress, burnout, and job dissatisfaction among physicians in a study by Kushnir et al. (2000).

A lack of possibilities to influence one's own work was another factor associated with young physicians' burnout among both genders in the present study. Many other studies on physicians and other employees have also shown that work control is an essential element of a positive work environment and that its presence protects physicians from

developing job dissatisfaction and psychiatric distress (e.g., a longitudinal study by Johnson et al. 1995). The definitions of work control and job autonomy have similar concepts. Autonomy can also be seen as a dimension of the control concept (Johnson et al. 1995; Falkum 1996). In this study, work control refers to the possibility to influence the content and organization of worktasks. In a Swedish study, low control over work and high work demands increased the risk of impaired general health more than threefold among general practitioners (Sundquist & Johansson 2000). Studies from the United States and The Netherlands also point out the importance of work control, but they also show the critical and direct effects of work–home interference on physicians' burnout (Linzer et al. 2001). In an American study, female physicians reported significantly less work control than male physicians over day-to day work issues and work schedules, and a lack of workplace control predicted burnout among women but not among men (McMurray et al. 2000). Also in a large Finnish cohort study on full-time municipal employees, Ala-Mursula et al. (2004) found that worktime control was important for women. In their study, the health effects of worktime control were particularly evident among women with families.

Self-assessment of too high a commitment to work was associated with young female physicians' burnout in the present study. In a study by Vehviläinen et al. (2003), Finnish physicians reported that too high a commitment to work and exhaustion were among the commonest reasons for physicians leaving municipal health centre work.

Thoughts of changing career were associated with burnout especially among young female physicians in the present study. A corresponding relationship has also been noted for the whole Finnish working population (Kalimo & Toppinen 1997). Also in the American study on young physicians, career satisfaction showed a strong inverse relationship to burnout (Shanafelt et al. 2002). With the use of a cross-sectional design, it is unclear whether dissatisfaction with the choice of profession is a cause or a consequence of burnout. According to the "Physician 98 Study" in Finland, a quarter of the respondents stated that, after having worked for an average of 6 years as a medical practitioner in different fields of health care, they would not choose medicine again if they were now beginning their university studies (Hyppölä 2001). However, 76% of the respondents were satisfied with their jobs in 1998.

It has been suggested that a key factor for physicians' unhappiness is that the profession now differs from what physicians expected, and that there is a need for an honest discussion of the match between physicians' expectations and organizational and societal needs (Edwards et al. 2002). It has also been suggested that the key to a sense of satisfaction in medical practice lies in the hands of education (Zuger 2004). The individual orientation that physicians were trained for does not fit the demands of current health care systems. Students should have more accurate expectations of their medical careers. However, it is also assumed that a certain amount of dissatisfaction may be inherent in the practice of medicine and can self-critically lead to good results (Zuger 2004).

Lack of possibilities to consult a colleague in the work unit was also associated with young female physicians' emotional exhaustion in the present study. Despite job control, Johnson et al. (1995) also highlight the importance of social support at work. Also in a study by Freeborn (2001), both a sense of control over one's work and social support from colleagues not only predicted lower levels of burnout but also professional satisfaction and organizational commitment. According to Schaufeli and Enzmann (1998) social support from supervisors is even more important than social support from co-workers.

A threat of legal action and a threat of violence are stressors that physicians increasingly face, and in this study they were found to be factors associated with young physicians' burnout. In the United States, the difficulty in finding malpractice insurance and paying steeply rising premiums is called the "medical malpractice crisis" (Mello et al. 2003). Although lawsuits have become common, especially in the United States, physicians have problems coping with them. "Defensive medicine", a strategy of using tests and procedures primarily to thwart potential litigation rather than to advance the well-being of patients, raises health care costs, compromises the physician's professional integrity, and drives a wedge through the doctor-patient relationship (Zuger 2004). It has even been found that the fear of being sued can affect physicians' behaviour in ways that increase the likelihood of legal action (Forster et al. 2002).

Interestingly, the threat of violence was associated with young male physicians' burnout but not with that of female physicians in the present study. Female physicians, however, experienced the threat of violence more often than their male counterparts did

(Töyry et al. 2000). The positive association found between young physicians' burnout and a threat of violence in the present study may be a novel finding.

In this study, physicians working in the field of teaching and research were less likely than other physicians to experience burnout. In a British study, academic work was also associated with less stress and burnout than clinical work was (Agius et al. 1996). In a Norwegian sample, physicians working as researchers felt stressed less often and had higher autonomy than other physicians (Falkum 1996). However, they had a significantly higher risk of being dissatisfied with their jobs than other physicians did. Burnout and well-being in the field of teaching and research need still further investigation.

6.4.2 Burnout by specialty

According to the present study, radiologists and psychiatrists are more likely than other specialists to experience burnout. There were, however, differences in the components of burnout between radiologists and psychiatrists. Radiologists were more likely than other specialists to experience cynicism and reduced personal accomplishment but not emotional exhaustion, while psychiatrists were more likely than other specialists to experience emotional exhaustion and cynicism but not reduced personal accomplishment.

6.4.2.1 Radiology

The present study used the MBI-HSS, which is designed for use with people working in human services and health care. Because radiologists have fewer direct patient contacts than other physicians, especially the items on cynicism (or depersonalization) and personal accomplishment referring to feelings in one's work with people, may not have been as suitable for them as for physicians working directly with patients. Therefore, the results on radiologists need careful interpretation. Moreover, an increased feeling of emotional exhaustion is considered to be a key aspect of the burnout syndrome, and radiologists were not more likely than other specialists to experience it.

The findings of a high level of burnout among radiologists are, however, in line with the results of a national survey by Ramirez et al. (1996) in the United Kingdom and with those of an earlier study on Finnish physicians' burnout (Olkinuora et al. 1990). In

1986, especially female radiologists scored higher on burnout than other female specialists in Finland. In the United Kingdom, consultant radiologists appeared to be at greater risk of burnout than consultants working in other specialities (surgeons, gastroenterologists and oncologists) (Ramirez et al. 1996). In the latter study, radiologists reported similar levels of emotional exhaustion and depersonalization but a higher level of low personal accomplishment (competence and achievement at work) than other consultants did. The leading source of job stress was work overload for all the consultants (Graham et al. 2000). The items specific to radiologists were related to the clinical support service role of radiology. These included "dealing with clinicians' requests for inappropriate examinations" and "dealing with the continuous expectation of clinicians that you do their work immediately". The researchers also pointed out recent changes in radiologists' role, in that, currently, more demands are made on radiologists regarding their responsibility for and involvement in patient care, such as the breast screening service, interventional radiology, and magnetic resonance imaging (Graham et al. 2000). The results of radiologists need further investigation.

6.4.2.2 Psychiatry

Psychiatry has remained a high burnout specialty since 1986 when Finnish physicians' burnout was first studied (Olkinuora et al. 1990). In the present study, psychiatrists experienced burnout more commonly than other specialists but not significantly more commonly than all other physicians. Outpatient psychiatrists were, however, more likely than all other physicians to experience burnout. Furthermore, the emotional exhaustion component of burnout was experienced more commonly by psychiatrists than by all other physicians.

The finding of a high level of the exhaustion component of burnout among psychiatrists is in line with the results of other researchers (Deary et al. 1996), particularly among outpatient psychiatrists (Prosser et al. 1996). Contacts with patients are experienced as rewarding in mental health care, but, on the other hand, community staff tends to feel burdened by a strong and uncomfortable sense of being constantly responsible for their clients' well-being and actions (Reid et al. 1999b). Also in the present study, too high a level of perceived job commitment was associated with psychiatrists' emotional exhaustion.

Contact with colleagues is one of the major rewards, and it is a way of coping with work demands in the work of mental health staff (Reid et al. 1999a). The results of our study point in the same direction – the lack of possibilities to consult a colleague and a lack of job supervision were associated with burnout among psychiatrists.

Violence against psychiatrists is common and seems to be on the increase (Soares et al. 2000). Threat of violence and actual violence were associated with psychiatrists' burnout in the present study. In a Swedish study, psychiatrists who experienced several violent incidents were younger and less experienced than colleagues who had experienced little or no violence (Soares et al. 2000). Furthermore, in a Swedish study, the respondents who experienced high physical demand and high psychological strain and were unsatisfied with their organization were at greater risk of being exposed to violence. Researchers concluded that the management of mental health professionals merits far more attention than it is receiving at present.

No significant differences in the level of job satisfaction were found between psychiatrists and other physicians in the present study. In a study on female physicians in the United States, female psychiatrists' satisfaction with their specialty was even greater than that of other female physicians (Frank et al. 2001). Life satisfaction was not inquired about in the American study. In the present study, psychiatrists expressed a lower level of life satisfaction than other physicians did.

The present results confirm the relationship between burnout and depression. Psychiatrists' self-reported depression was significantly associated with both the emotional exhaustion component of burnout and the three-dimensional burnout syndrome. However, because of the cross-sectional design the causal relationship could not be confirmed.

6.4.2.3 Paediatrics and ophthalmology

In the present study, ophthalmologists and paediatricians were less likely than other specialists to experience burnout. In Finland many ophthalmologists work as full-time private practitioners, and the type of job choice explains some of the results for the ophthalmologists but not the results of paediatricians. Other work-related and personal factors possibly associated with lower burnout levels among these specialities need further investigation.

6.4.3 Burnout by gender and family

The present study showed no significant difference in the prevalence of the three-dimensional burnout syndrome between men and women when age was considered. However, as in many previous studies, the women were more likely than the men to experience exhaustion, and less likely to experience cynicism, as components of burnout. This result has been explained by gender-dependent stereotypes (Maslach et al. 2001). Another explanation could be the workload. Due to additional responsibilities at home, working women experience higher overall workloads than working men and the workload has been found to be positively related to emotional exhaustion (Schaufeli & Enzmann 1998). Too high a commitment to work was associated with young female physicians' burnout but not with that of the male physicians in the present study. Furthermore, the women more often reported that combining work and family was the greatest cause of stress for them. The women also had made more compromises between family and work.

According to the present results, however, it seems that female physicians had succeeded to combine work and family to some degree – probably by making compromises – because both the female and male physicians with children experienced fewer burnout symptoms than physicians without children. The Women Physicians' Health Study also found that physicians with children were more interested in choosing a physician's career again if given the opportunity than physicians without children were (Frank et al. 1999). This finding suggests that multiple roles may bring benefits that mitigate strain. The positive health effects of children have also been found in a study on nurses (Walters et al. 1996). Having children can also be seen as a sign of a balanced social life, and it is considered normal among married people. This attitude may also affect the concept of well-being among those having children.

As the proportion of female physicians continues to increase, the possibilities to combine work and family will become even more important in the practice of the profession. Both genders of physicians have expressed considerable dissatisfaction with the balance between their careers and family lives, and they have reported that not having enough time for family and personal life is one of the least satisfying aspects of medical practice (Hojat et al. 1995; Richardsen & Burke 1999). Young Finnish physicians – also men – have ranked family life as the most important value in their

lives (Neittaanmäki et al. 1999; Mattila et al. 2003). However, working practices and attitudes within the hospital culture may not give physicians enough time to spend on personal or family life if they want a successful career (Dumelow et al. 2000).

More studies are needed to explain the health effects and other possible effects of the work–family balance for physicians. It is not only important to recognize the differences between men and women, but also the differences between women. Measures of work stress unique to women also need to be developed and systemically explored (Gross 1997). Because much occupational stress research, including that on physicians, is based upon predominantly male populations, the results do not necessarily apply to women.

6.5 Future perspectives

Physicians' unhappiness seems to be a worldwide phenomenon (Smith 2001; Edwards et al. 2002; Zuger 2004). Studies on physicians' health have focused mainly on negative aspects, such as suicides, substance abuse, depression, and other psychiatric disorders. Mostly, this study focused in the same negative way. However, health or wellness is more than the absence of disease or burnout or other distress. So far we know little about physicians' wellness, although some practical suggestions have already been published based on physicians' well-being (Shanafelt et al. 2002). At least two key themes have been found to promote physicians' well-being – the ability of physicians to influence their own happiness through their personal values and choices and the need for physicians to control their working environment. If the results are viewed from the perspective of positive psychology, physicians could foster their own well-being by re-examining their personal lives and values, and health care organizations should engage physicians in the design and delivery of care (Yamey & Wilkes 2001; Spickard et al. 2002). Maslach et al. (2001) have also expanded the construct of burnout by its positive antithesis of job engagement. It has already been investigated also in Finland (Hakanen 2004). New theoretical frameworks for burnout that more explicitly integrate both individual and situational factors, rather than considering them separately, have also been developed (Maslach et al. 2001). These frameworks are based on the past 25 years of research on burnout, which have established the complexity of the construct of burnout.

In the future, more prospective studies are needed that further explore the causes of physicians' distress both at an individual and an organizational level. Furthermore, instruments are needed to specifically measure physicians' well-being. The well-being of female physicians, which may be dependent on variables that differ from those of their male colleagues, should be evaluated separately. Young physicians are also in need of special consideration. Large national studies, like the present study, offer possibilities to explore different physician groups, including different specialities, different types of employment, and different positions. Different work produces different stressors, but it also provides different opportunities. More focus needs to be placed on the psychosocial aspects of physicians' work. An honest discussion of the current match between physicians' capacities and organizational and societal demands should be carried out. More information should also be obtained about the possible mismatch between physicians' and organizations' values and goals. It is important to have clear goals that are achievable in one's work. These goals must be valued by the employees, who also need to know when they have achieved them.

The relationship between burnout and job performance is also an interesting issue. So far the results have been inconsistent (Schaufeli & Enzmann 1998). A longitudinal study by Firth-Cozens (2001) found a relationship between physicians' stress and poor patient care. Also in an American study, residents' burnout was associated with self-reported sub-optimal patient care practices (Shanafelt et al. 2002). The possible relationship between burnout and physicians' job performance needs further investigation.

"It's time to be proactive about stress and prevent it", said Jenny Firth-Cozens (2003) in her editorial, and continues "the sooner we accept that tackling stress is a normal part of management, and an essential part of patient safety, the sooner the lives of doctors and their patients will improve". Although we continuously need new information in a changing world, we already know enough about the causes of physicians' stress to start tackling and preventing it now. Furthermore, several predictors of burnout identified for physicians concur with the predictors of burnout in the general population. The work, however, will not be easy. Scahaufeli and Enzmann (1998) reviewed more than 30 different approaches to preventing or combating burnout, and yet there appeared to be no general recipe.

Physicians themselves are one key to a well-functioning health care system, and their knowledge should more widely to be used to enhance their personal, occupational, and social well-being (Arnetz 2001). Occupational health services also need new instruments for tackling physicians' stress, for which the reasons often lie more at the organizational level than at a personal one. Whether or not physicians' attitudes towards their own health and the use of formal health services have really changed should also be evaluated.

7. MAIN FINDINGS AND CONCLUSIONS

1. Physicians reported several common diseases as often as or even more often than other employees, although they had taken sick leaves and visited other physician's surgeries less frequently than other employees. On average, male physicians did not assess their health as better than that of other male employees, whereas female physicians rated their health as good or fairly good more often than other female employees did.

2. The proportion of physicians who personally used medication often or regularly increased significantly from 1986 to 1997. Self-treatment was common. The prevalence of self-medication depended on the type of medical condition. For instance, as much as 62% of physicians' mental disorders was self-medicated in 1997.

3. A total of 44% of the male physicians and 51% of the female physicians experienced a severe or moderate burnout syndrome (burnout symptoms at least every month). The gender difference disappeared when age was controlled in the analysis. Women were more likely than men to experience exhaustion and reduced personal accomplishment, and men were more likely than women to experience cynicism.

Physicians working in municipal health centres were more likely than other physicians to experience burnout, and physicians working as full-time private practitioners or in the field of teaching and research were less likely to experience burnout.

Radiologists and psychiatrists were more likely than other specialists to experience burnout. However, the results of the radiologists need further investigation. The MBI-HSS may not be as suitable for radiologists as for physicians working more directly with patients.

4. Psychiatrists and child psychiatrists assessed their health as worse than that of other physicians. Psychiatrists and child psychiatrists also reported depression and other mental disorders and used psychotropics more often than other physicians. Moreover,

psychiatrists expressed more suicidal thoughts, and child psychiatrists had a higher prevalence of attempted suicide than other physicians.

5. A total of 56% of the young male physicians and 62% of the young female physicians (less than 6 years since graduation) experienced a severe or moderate burnout syndrome (burnout symptoms at least every month). The prevalence of severe burnout was 3% (burnout symptoms several times per week or daily). The following self-perceived factors were associated with burnout among young physicians: insufficient professional competence, lack of possibilities to influence one's own work, lack of possibilities to consult a colleague in the work unit (women), too high a commitment to work (women), dissatisfaction with the choice of profession, thoughts about legal action, and threat of violence (men).

6. Both male and female physicians reported that work was their commonest cause of stress. If physicians had children, combining work and family was the commonest source of stress for women, but work still remained the commonest cause of stress for men. Female physicians made compromises between family and work more often than male physicians, for instance, limited the number of children, delayed having children, gave up postgraduate or continuing medical education, worked part-time because of family, and gave up a job because of a spouse's need to move. Among both genders of physicians, having children was associated with less cynicism and reduced personal accomplishment, but having children did not affect exhaustion.

In conclusion:

- The difference in self-reported health between the total employed population and physicians did not seem to be high in Finland, but the threshold for seeking formal help was higher for physicians and self-treatment was common. Health services need to be further developed for physicians.
- Burnout was common among Finnish physicians in 1997. However, the prevalence of burnout varied a great deal between different physician groups; this finding suggests that burnout is a work-related problem.

- Health problems of physicians in the field of psychiatry are in need of special attention.
- In contrast to the general Finnish population, young physicians experienced burnout more often than older ones. Several work-related factors must be taken into account in the development of a healthy professional work environment for young physicians.
- Issues concerning work–family balance are important among physicians and will become even more important as the proportion of female physicians is still increasing.

8. SUMMARY IN FINNISH - SUOMENKIELINEN YHTEENVETO

SUOMALAISTEN LÄÄKÄRIEN TYÖUUPUMUS JA OMA ARVIO TERVEYDESTÄÄN

Tutkimuksen lähtökohtia

Lääkärien somaattisesta sairastamisesta on vähemmän tietoa kuin psyykkisestä sairastavuudesta. Tiedot lääkärien terveydentilasta pohjautuvat paljolti rekisteritietoihin mm. kuolleisuudesta. Lääkärien kokonaiskuolleisuusluvut ovat pienemmät kuin muun väestön, mutta lääkärien suuri itsemurhakuolevuus on herättänyt huomiota. Lääkärien terveydenhuollon järjestämisessä on erityisongelmia eikä työterveyshuolto ole toteutunut samalla tavoin kuin muilla ammattiryhmillä.

Työuupumus on vakava, työssä kehittyvä krooninen stressioireyhtymä. 1990-luvulla työuupumus oli laajan mielenkiinnon kohteena suomalaisessa työelämässä. Työterveyslaitoksen kattavan selvityksen mukaan vuonna 1997 yli puolet työssä käyvistä koki jonkinasteista työuupumusta (lievää 48 %, vakavaa 7 %). Suomalaisten lääkärien työuupumusta selvitettiin ensimmäisen kerran laajalla kyselytutkimuksella jo vuonna 1986, mutta tuoretta tietoa lääkärien työuupumuksesta ei ollut.

Työ- ja perheasioiden yhteensovittamiseen liittyvät kysymykset ovat myös lääkäreille ajankohtaisia. Suomalainen lääkärikunta on viime vuosikymmeninä naisvaltaistunut, ja myös nuorten mieslääkärien arvomaailmassa perhe on tärkeä.

Tavoitteet

Tämän väitöskirjatyön tavoitteena oli selvittää suomalaisten lääkärien terveydentilaa (koettu terveys, sairaudet, sairauslomat, terveyspalvelujen käyttö) sekä lääkärikunnan sisällä että verrattuna muuhun työssä käyvään väestöön, itsehoitoa ja -lääkitystä sekä muutoksia lääkkeiden käytössä. Lisäksi tavoitteena oli selvittää työuupumusoireiden esiintyvyyttä erilaisissa työtehtävissä (päätoimipaikka, virka-asema, erikoisala) sekä työolotekijöiden, sukupuolen, iän ja perherakenteen yhteyttä lääkärien työuupumusoireisiin ja työ- ja perhe-elämän yhteensovittamiseen liittyviä valintoja.

Menetelmät

Tutkimusaineisto koottiin loppuvuodesta 1997 postikyselynä, jossa perusjoukkona olivat alle 66-vuotiaat Suomessa työssä olevat lääkärit (n = 13 615). Näistä noin joka kolmannelle satunnaisotannalla valitulle lääkärille lähetettiin kyselylomake (n = 4 477). Kysely pohjautui vuonna 1986 toteutettuun "Stressi ja burnout lääkärin työssä" -tutkimukseen, jota täydennettiin valtakunnallisilla työoloja ja terveyttä selvitelleiden tutkimusten kysymyksillä vertailukelpoisen tiedon saamiseksi myös suhteessa koko työssä käyvään väestöön. Työuupumuksen mittaamiseen käytettiin Maslachin menetelmää, ja mittari koostui 22 kysymyksestä. Kahden kyselykierroksen jälkeen vastauksensa oli lähettänyt 74.0 % otoksesta (n = 3 313).

Tulokset

Selkäsairaus (naiset 18 %, miehet 22 %) ja ruoansulatuselimistön sairaus (naiset 16 %, miehet 19 %) olivat yleisimmät lääkärien ilmoittamat sairaudet kyselyä edeltäneen vuoden aikana. Lääkärit ilmoittivat itsellään olevan monia sairauksia yhtä usein tai jopa useammin kuin työssä käyvä väestö yleensä. Useammin ilmoitettuja sairauksia olivat selkäsairaus, ruoansulatuselimistön sairaus, pitkäaikainen ihottuma, mielenterveyden häiriö ja mieslääkäreillä myös astma. Kuitenkin lääkärit olivat olleet toisen lääkärin hoidossa huomattavasti harvemmin kuin muu väestö – hoitaen sairauksiaan itse – ja he olivat olleet myös vähemmän sairauslomilla.

Oman terveydentilansa arvioi hyväksi tai melko hyväksi 79 % naislääkäreistä ja 76 % mieslääkäreistä. Naislääkärit arvioivat terveydentilansa hyväksi tai melko hyväksi useammin kuin työssä käyvät naiset yleensä. Sen sijaan mieslääkärit eivät arvioineet terveydentilaansa merkitsevästi paremmaksi kuin työssä käyvät miehet keskimäärin.

Usein tai säännöllisesti lääkkeitä käyttävien lääkärien määrä oli lisääntynyt huomattavasti vuodesta 1986 vuoteen 1997 (miehet 28 %:sta 44 %:iin, naiset 29 %:sta 49 %:iin). Tavallisimmat syyt lääkkeiden käyttöön olivat särkytilat, unettomuus tai mielenterveyden häiriöt sekä ruoansulatuskanavan oireet tai sairaudet. Itselääkitys oli yleistä. Esim. lähes kaksi kolmasosaa (62 %) mielenterveyden häiriöitä raportoineista lääkäreistä hoiti mielenterveyden häiriötään itse määräämällään lääkityksellä ja vain noin kolmannes oli toisen lääkärin hoidossa.

Psykiatrit ja lastenpsykiatrit arvioivat oman terveydentilansa merkitsevästi huonommaksi kuin muut lääkärit. Psykiatrian alan lääkärit myös raportoivat masennusta ja muita mielenterveyden häiriöitä sekä käyttivät lääkitystä unettomuuteen tai mielenterveyden häiriöihin useammin kuin muut lääkärit. Lisäksi psykiatrit raportoivat itsemurha-ajatuksia ja lastenpsykiatrit itsemurhayrityksiä useammin kuin muut lääkärit.

Vuonna 1997 naislääkäreistä 50.5 % ja mieslääkäreistä 44 % koki vähintään lievää työuupumusta (työuupumusoireita keskimäärin muutaman kerran kuukaudessa). Kun ikä otettiin huomioon (mieslääkärit vanhempia kuin naislääkärit), sukupuolten välinen ero työuupumuksen esiintyvyydessä ei ollut tilastollisesti merkitsevä. Naislääkäreistä 2 %:lla ja mieslääkäreistä 3 %:lla työuupumus oli vakava (työuupumusoireita keskimäärin muutaman kerran viikossa tai päivittäin). Työuupumuksen esiintyvyys oli suurin terveyskeskuslääkäreillä (vähintään lievänä 53 %) ja pienin päätoimisilla yksityislääkäreillä (23.5 %) tai päätoimisesti tutkimus- tai opetustyötä tekevillä (36 %). Erikoislääkäreistä työuupumus oli yleisintä radiologeilla (67.5 %) ja psykiatreilla (55 %) ja harvinaisinta silmälääkäreillä (23 %) ja lastenlääkäreillä (32 %).

Työuupumus oli nuoremmilla lääkäreillä yleisempää kuin iäkkäämmillä, päinvastoin kuin suomalaisessa työikäisessä väestössä yleensä. Nuorten lääkärien (alle 6 vuotta valmistumisesta) työuupumukseen olivat yhteydessä riittämättömiksi koetut työvalmiudet, huonot vaikutusmahdollisuudet omaan työhön, liian vähäiset konsultaatiomahdollisuudet omassa työyksikössä, liian suuri työsidonnaisuus, tyytymättömyys ammatinvalintaan, pelko valituksen, kanteen tai syytteen kohteeksi joutumisesta ja fyysisen väkivallan tai uhkailun pelko.

Sekä mies- että naislääkärit ilmoittivat tärkeimmäksi stressiä aiheuttavaksi tekijäksi työn, naiset kuitenkin myös työ- ja perheasioiden yhteensovittamisen useammin kuin miehet. Naiset olivat merkitsevästi useammin kuin miehet tehneet tietoisia ”kompromisseja” joko työn tai perheen hyväksi tilanteissa, joissa näiden yhteensovittaminen oli tuntunut vaikealta (rajoittaneet haluamaansa lasten lukumäärää työhön tai työssä käyntiin liittyvistä syistä, lykänneet lasten hankkimista työhön liittyvistä syistä, luopuneet työpaikasta aviopuolison työn edellyttämän paikkakunnalta muuton vuoksi, luopuneet lisä-, jatko- tai täydennyskoulutusmahdollisuuksista perheen vuoksi, työskennelleet vain osa-aikaisesti perheen vuoksi). Työuupumusoireita (kyynistyneisyys, heikentynyt ammatillinen itsetunto) ilmeni niillä mies- ja naislääkäreillä, joilla oli lapsia, merkittävästi vähemmän kuin heidän lapsettomilla kollegoillaan.

Päätelmät

Lääkärit eivät todennäköisesti olekaan niin terveitä kuin vähäisistä sairauspoissaoloista ja vähäisestä terveyspalvelujen käytöstä voisi päätellä. Lääkärit hoitavat yleisesti sairauksiaan itse. Usein tai säännöllisesti lääkkeitä käyttävien lääkärien määrä lisääntyi huomattavasti vuodesta 1986 vuoteen 1997 ja itselääkitys oli yleistä. Lääkäreille suunnattavien terveyspalvelujen kehittämistä tulee edelleen jatkaa, ja mm. työterveyspalveluihin on syytä löytää lääkäreille sopivia muotoja.

Työuupumus on myös lääkäreillä merkittävä työterveysongelma, vaikka kokonaisuutena lääkäreillä oli vähemmän työuupumusta kuin työikäisellä väestöllä yleensä vuonna 1997. Työuupumuksen esiintyvyyden huomattava vaihtelu lääkärikunnan sisällä kuvaa työuupumuksen taustatekijöiden työperäisyyttä. On epätodennäköistä, että esim. valikoituminen erilaisiin tehtäviin selittäisi näin suurta vaihtelua. Tutkimuksessa käytetty työuupumusmittari on kuitenkin suunniteltu ihmissuhdetöitä tekeviä varten, joten on mahdollista, että se ei sovellu kaikille erikoisaloille yhtä hyvin (esim. radiologiassa vähemmän suoria potilaskontakteja kuin useimmilla muilla erikoisaloilla).

Naislääkärit näyttivät joutuvan tasapainottelemaan työn ja perheen välillä enemmän kuin mieslääkärit. Kun lääkärikunta edelleen naisvaltaistuu, mahdollisuus työ- ja perheasioiden yhteensovittamiseen tulee vielä entistä tärkeämmäksi. Tämä on otettava huomioon myös suomalaista terveydenhuoltoa kehitettäessä.

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ORIGINAL PUBLICATIONS I-V

Appendix 1

Literature review on physicians' burnout (Table)

LITERATURE REVIEW ON PHYSICIANS' BURNOUT

Study	Design	Subjects	Methods	Main results
Rafferty et al. 1986 USA	Cross-sectional questionnaire survey by residents, and independent assessments of residents' burnout by the medical director and the psychologist	Residents in training in the four family practice residencies affiliated with Wright State University School of Medicine n=67 (response rate 94%)	The Maslach Burnout Inventory; overall job satisfaction: 5-point Likert item: "How satisfied are you with your job as a resident"; overall self-assessment of burnout: 9-point Likert item with the definition of burnout; independent assessments of burnout by the medical director and the psychologist: the same 9-point Likert scale and definition of burnout as for residents	The emotional exhaustion subscale significantly correlated with self-assessed burnout, job satisfaction, and assessments of resident burnout by faculty; the independent observers were the most sensitive to residents' emotional exhaustion and less likely to assess accurately the less visible aspects of burnout related to depersonalization and lack of achievement
McCranie & Brandsma 1988 USA	Prospective questionnaire survey	Eight classes of alumni of the Medical College of Georgia, who had a medical school admission interview in 1953-1961, and still-living physicians in 1982 n=440 (response rate 72%)	The Minnesota Multaphasic Personality Inventory before entering medical school; tedium scale to evaluate current symptoms of burnout 25 years later	Higher burnout scores significantly correlated with low self-esteem, feelings of inadequacy, dysphoria and obsessive worry, passivity, social anxiety, and withdrawal from others (measured 25 years earlier)
Olkinuora et al. 1990 Finland	Cross-sectional questionnaire survey	Random sample of licensed physicians under 66 years of age from the register of the Finnish Medical Association n=2671 (response rate 76%)	The Burnout Index (subscales: exhaustion 5 items, emotional hardening 6 items, frustration 4 items); most items (10) adopted and modified from the Maslach Burnout Inventory	Highest burnout scores were found for those working in municipal health centres; lowest burnout scores were recorded for those working in private practice, universities, research institutes, public offices and organizations; non-specialists had higher burnout scores than specialists; a polarization occurred between "higher burnout specialities" and "lower burnout specialities"

Literature review on physicians' burnout (cont.)

Study	Design	Subjects	Methods	Main results
Deckard et al. 1994 USA	Cross-sectional questionnaire survey	Random sample of physicians employed by the staff-model plans in New England and in the Midwest n=235 (response rate 58%)	The long version of the Clinician Worklife Satisfaction Survey that included burnout items from the Maslach Burnout Inventory	Low satisfaction with workload/scheduling, and input/influence were the strongest predictors of emotional exhaustion; low satisfaction with patient interactions and quality of care the major predictors of depersonalization
Lloyd et al. 1994 Canada	Cross-sectional questionnaire survey	Certified emergency physicians based on membership lists provided by the Canadian College of Family Physicians n=223 (response rate 68%)	The Maslach Burnout Inventory; the Emergency Physician Job Satisfaction Measurement Instrument; the Centre for Epidemiologic Research Self-Report Depression Scale	A low level of emotional exhaustion (medium or high 46%), a high level of depersonalization (medium or high 93%), and a low level of personal accomplishment (medium or low 79%); increased age, being a department head, and increased weeks of holiday per year were positive contributors to job satisfaction; involvement in medical education and increased clinical workhours worked per year were negative contributors to job satisfaction; a significant correlation was found between depression and level of job satisfaction
Kirwan & Armstrong 1995 England	Cross-sectional questionnaire survey	General practitioners in contract with the Northamptonshire Family Health Services Authority n=245 (response rate 83%)	The Maslach Burnout Inventory	A significantly higher level of burnout was found for the Northamptonshire doctors than for the North American doctors; part-time general practitioners experienced lower levels of burnout than full-time general practitioners

Literature review on physicians' burnout (cont.)

Study	Design	Subjects	Methods	Main results
Agius et al. 1996 Scotland	Cross-sectional questionnaire survey	Random sample of National Health Service consultants: 100 randomly selected from medicine and surgery; and 50 each in anaesthetics, obstetrics and gynaecology, psychiatry, public health, radiology and pathology and other laboratory specialities n=375 (response rate 75%)	The Maslach Burnout Inventory; the consultants work demands scale; the specialist doctors stress inventory	Professional work demands of consultants fell into three categories: clinical, academic, and administrative; the perceived stressors separated into four main factors: clinical responsibility, demands of time, organizational constraints, and personal confidence; age and years as a consultant were negatively associated with burnout
Deary et al. 1996 Scotland	Cross sectional questionnaire survey	Random sample of consultant doctors working within the National Health Service in Scotland n=188; 149 from medicine and surgery, 39 psychiatrists (response rate 75%)	The Maslach Burnout Inventory; the NEO-Five Factor Inventory; the Coping Inventory for Stressful Situations; the Consultants Work Demands Scale; the Specialist Doctors Stress Inventory; the General Health Questionnaire (GHQ)	Psychiatrists reported higher work-related emotional exhaustion and severe depression than surgeons or other physicians; psychiatrists reported fewer clinical work demands; psychiatrists' personality scores were high in neuroticism, openness and agreeableness, and low in conscientiousness; no differences were found in the coping styles; female psychiatrists had higher general psychological distress and GHQ-somatic symptoms than other female physicians

Literature review on physicians' burnout (cont.)

Study	Design	Subjects	Methods	Main results
Ramirez et al. 1996 England	Cross-sectional questionnaire survey	Random sample of gastroenterologists who were members of the British Society of Gastroenterology and clinical radiologists ascertained through the Royal College of Radiologists, all surgeons who were members of the British Association of Surgical Oncology and all British clinical and medical oncologists ascertained through the Royal Colleges of Radiologists and Physicians n=882; 241 gastroenterologists, 214 radiologists, 161 surgeons, 266 oncologists (response rate 78%)	The Maslach Burnout Inventory; the General Health Questionnaire; study-specific questions (job stress and satisfaction)	Feeling overloaded and its effect on home life, feeling poorly managed and resourced, and dealing with patients' suffering were associated with hospital consultants' burnout; job satisfaction protected consultants from burnout; burnout was more prevalent amongst consultants who felt insufficiently trained in communication and management skills; among the specialties radiologists reported the highest level of burnout in terms of low personal accomplishment; being aged 55 years or less and being single were independent risk factors for burnout
Varga et al. 1996 Spain	Cross-sectional questionnaire survey	All doctors at the University Hospital of Salamanca, Spain n=179 (response rate 60%)	Maslach Burnout Inventory; the General Health Questionnaire	A medium degree of burnout was related to position, but unrelated to sociodemographic factors (age, gender, marital status, number of children, profession of spouse); non-chiefs and particularly those working in surgical specialities showed the highest degree of burnout and chief surgeons the lowest degree of burnout; 20% of the doctors showed psychosomatic disturbances of psychological origin

Literature review on physicians' burnout (cont.)

Study	Design	Subjects	Methods	Main results
Geurts et al. 1999 The Netherlands	Cross-sectional questionnaire survey	Medical residents of an academic hospital n=166 (response rate 60%)	Dutch version of the Maslach Burnout Inventory to measure emotional exhaustion and depersonalization; Dutch questionnaire on subjective health to measure general psychological health indicators; items from the Rota-Risk-Profile-Analysis to measure worktime schedule; the work pressure scale to measure workload; the Maastricht Autonomy Questionnaire to measure job autonomy; a self-developed scale to assess dependency on superior; the "Interrole conflict" scale to measure work-home interference	One home characteristic (having a spouse who works overtime frequently) and three work characteristics (an unfavourable worktime schedule, a high quantitative workload, a problematic dependency on the superior) put pressure on the interface between work and home life; work-home interference was positively associated with emotional exhaustion and depersonalization (work-related psychological health indicators) and with psychosomatic health complaints and sleep deprivation (general health psychological indicators); work-home interference mediated the impact of work and home characteristics on psychological health indicators, particularly on the general health indicators
Grassi & Magnani 2000 Italy	Cross-sectional questionnaire survey	General practitioners and hospital physicians in Ferrara, North-East Italy n=328; 182 general practitioners (response rate 89%), 146 hospital physicians (response rate 71%)	The Maslach Burnout Inventory, the General Health Questionnaire	Higher level of emotional exhaustion amongst general practitioners than amongst hospital physicians; higher level of depersonalization among male general practitioners than among female general practitioners; higher level of (low) personal accomplishment among male hospital physicians than among female hospital physicians

Literature review on physicians' burnout (cont.)

Study	Design	Subjects	Methods	Main results
Kushnir et al. 2000 Israel	Cross-sectional questionnaire survey	Random sample of members of the Israel Society of Family Physicians, and the Israel Society of Ambulatory Paediatrics n=309; 183 family physicians (response rate 81%), 126 paediatricians (response rate 78%)	Professional burnout: a scale measuring five aspects of energetic exhaustion: emotional and physical exhaustion, tension, listlessness and cognitive weariness (22 items with a 7-point response scale); job stress: the Job Demands-Control model of occupational stress; job satisfaction: "Taking into account all possible aspects of your work, how satisfied are you with your job?" (20-point response scale)	Participation in continuing medical education activities was associated significantly with job stress (negatively) and with job satisfaction (positively) among family physicians, and with burnout (negatively) among paediatricians; perceived opportunities for professional updating was associated significantly with job stress (negatively) and with job satisfaction (positively) among paediatricians and with job stress (negatively) and burnout (negatively) among family physicians
McMurray et al. 2000 USA	Cross-sectional questionnaire survey	Nationally representative random stratified sample of physicians in primary and specialty nonsurgical care based on the American Medical Association masterfile n=2326 (735 women, 1585 men, 6 gender unknown); adjusted response rate 52%	An adapted burnout scale utilized a Likert scale of 1 to 5, with category 1 = "I have no symptoms of burnout", category 3 = "I have at least 1 symptom of definite burnout", and category 5 = "I am severely burned out". 150 items assessing career satisfaction and multiple aspects of worklife	Women had greater odds of reporting burnout than men; women were more likely than men to report satisfaction with their specialty and with patient and colleague relationships, but less likely to be satisfied with autonomy, relationships with community, pay, and resources; women reported significantly less work control than men over day-to day work issues and work schedules; lack of workplace control predicted burnout for women but not for men; the presence of children under the age of 6 years did not predict burnout

Literature review on physicians' burnout (cont.)

Study	Design	Subjects	Methods	Main results
Freeborn 2001 USA	Cross-sectional questionnaire survey	Physicians practising in two Kaiser Permanente regions: the Northwest and the Ohio regions n=608 (response rate 80%)	A self-administered questionnaire that included both structured and open-ended questions. Burnout: the tedium index (3 aspects of tedium: physical exhaustion, emotional exhaustion, mental exhaustion). Physician satisfaction: a modified version of the measure developed by Lichtenstein.	A sense of control over the practice environment, reasonable work demands, social support from colleagues and older age were significant predictors for all three outcomes: lower levels of burnout, professional satisfaction and organizational commitment; other significant predictors of burnout were stress from uncertainty and characteristics of the physicians' caseloads (percentage of female patients, percentage of patients aged 65 years and older); the model accounted for 36% of the total variation in the burnout variable
Linzer et al. 2001 USA & The Netherlands	Cross-sectional questionnaire surveys United States: the Physician Worklife Study The Netherlands: the Dutch Study of Motivation among Medical Consultants	USA: random selection from the American Medical Association masterfile (family physicians excluded) n=1749 (response rate 52%) The Netherlands: random sample of Dutch medical specialists (not including general practitioners) n=1349 (response rate 63%)	U.S. study: burnout assessed with a single item adapted from the tedium index Dutch study: emotional exhaustion scale of the Maslach Burnout Inventory Listing variables from each questionnaire associating with stress, satisfaction, or burnout; analysing within-country relationships between variables through structural equation modelling; developing a burnout model for both countries and comparing relationships between variables cross-nationally	Model to predict physician burnout: background variables (gender, age, children, practice type, workhours) had direct effects on mediating variables (work control, work–home interference, home support) that had effects on stress and satisfaction; stress, satisfaction and work–home interference had direct effects on burnout; the proportion of variance of burnout explained by the model: USA 50%, The Netherlands 51%

Literature review on physicians' burnout (cont.)

Study	Design	Subjects	Methods	Main results
Shanafelt et al. 2002 USA	Cross-sectional questionnaire survey	Residents in the University of Washington Affiliated Hospitals Internal Medicine Residency program n=115 (response rate 76%)	The Maslach Burnout Inventory; eight statements describing self-reported practices and attitudes of patient care; a two-item screening questionnaire for depression; the Alcohol Use Disorders Identification Test (AUDIT)	76% of medical residents met criteria for burnout; of these residents of burnout, 50% had depressive symptoms and 9% had at-risk alcohol use; burned-out residents more often reported career dissatisfaction and suboptimal patient care practices than residents without burnout
Kluger et al. 2003 Australia	Cross-sectional questionnaire survey	Representative sample of specialist anaesthetists within each state of Australia n=422 (response rate 60%)	The Maslach Burnout Inventory; questions regarding stress and job satisfaction/dissatisfaction in anaesthesia developed using a modified Delphi process; the visual analogue scale to assess stress	Anaesthetists' burnout levels: high emotional exhaustion 20%, high level of depersonalization 20%, and low level of personal achievement 37%; stressful aspects of anaesthesia included time constraints and interference with home life; experienced assistants and improved work organization helped to reduce stress; the high standard of practice and practical aspects of the job were deemed satisfying; poor recognition, providing service for dubious operations, and long hours were the major dissatisfying aspects of the job; female anaesthetists reported higher stress levels than males

Literature review on physicians' burnout (cont.)

Study	Design	Subjects	Methods	Main results
Visser et al. 2003 The Netherlands	Cross-sectional questionnaire survey	Random sample of specialists selected from the total population of Dutch medical specialists (not including general practitioners) n=1435 (response rate 63%)	The Maslach Burnout Inventory; the Consultants' Mental Health Questionnaire; the Multidimensional Perfectionism Scale; VOS-D (a scale measuring social support from partner, friends and family); the Consultants' Job Stress and Satisfaction Questionnaire	Burnout explained by both high stress and low satisfaction rather than by stress alone; perceived working conditions more important in explaining stress and satisfaction than personal or job characteristics; among perceived working conditions, the interference of work with home life, impossibility of living up to one's professional standards and experiencing societal pressure were the most related to stress; feeling poorly managed and resourced diminished job satisfaction
McManus et al. 2004 England	Prospective questionnaire survey	All individuals who had applied to any of the five UK medical schools taking part in the study in 1990 (response rate 93%) and were accepted for entry in 1991, 1992 or 1993 and were in their final year at medical school in 1995-1998 (response rate 56%) and as the pre-registration house officer in 1996-1999 (response rate 58%) and in the UK Medical Register in 2002 (response rate 63%) n=1668 (in 2002)	The Study Process Questionnaire (in the applicant and final year, and in 2002); the Maslach Burnout Inventory (at the end of the pre-registration house officer year and in 2002); the 12-item General Health Questionnaire (at the end of the pre-registration house officer year and in 2002); the questionnaire assessing the "Big Five" personality dimensions (at the end of the pre-registration house officer year and in 2002); Approach to Work Questionnaire in 2002; the Workplace Climate Questionnaire in 2002	Doctors' approaches to work were predicted by study habits and learning styles; perceived workplace climate and workload predicted by approaches to work and by measures of stress, burnout and satisfaction with medicine; stress, burnout and satisfaction correlated with trait measures of personality taken 5 years earlier

Appendix 2

The questionnaire “Lääkärien työolot ja kuormittuneisuus” [Working Conditions and Work Strain among Physicians, in Finnish]

Työterveyslaitos Suomen Lääkäriliitto

Lääkärien työolot ja kuormittuneisuus

- Täytä lomake huolellisesti ja pyri vastaamaan jokaiseen kysymykseen.
- Jos olet työssä, vastaa nykyisen päätyösi mukaan. Mikäli et ole tällä hetkellä työssä, vastaa viimeisimmän työsi mukaan.
- Rengasta yhden tai tarvittaessa useamman vaihtoehdon edessä oleva numero.
- Älä kirjoita viivakoodien päälle.
- Ole ystävällinen ja palauta lomake oheisessa kuoressa marraskuun 3. päivään 1997 mennessä. Kiitos!

TAUSTATIEDOT

1 Sukupuoli

1 mies
2 nainen

2 Minkä ikäinen olet?

_____ vuotta

3 Työskentelypaikkakunta

1 pääkaupunkiseutu, Turku, Tampere, Oulu, Kuopio
2 muu kaupunki
3 maaseutu

4 Erikoistuminen

1 en ole erikoistunut enkä aiokaan erikoistua
2 en ole erikoistunut, mutta aion erikoistua
3 olen erikoistumassa, erikoisala _____
4 olen erikoislääkäri, erikoisalani on/ovat (myös ns. suppeat)
a) _____
b) _____
c) _____

5 Akateeminen pätevyys

1 LL
2 LKT, LT, dos.
3 apul.prof., prof. (myös todetut pätevyydet)
4 lisäksi muu akateeminen tutkinto

6 Kuinka monta vuotta on kulunut lääkäriksi valmistumisestasi (perustutkinnon suorittamisesta)?

1 -2 vuotta
2 3 - 5 ”
3 6-10 ”
4 11-15 ”
5 16-20 ”
6 21-30 ”
7 yli 30 ”

7 Nykyinen työskentely

1 olen lääkärin koulutusta edellyttävässä työssä
2 muussa ansiotyössä
3 olen tällä hetkellä poissa työstä (esim. asevelvollisuus, äitiysloma, sairausloma, eläke)
4 olen tällä hetkellä työtön

Jos vastasit 3 tai 4, jatka vastaamista viimeisimmän työsi mukaan.

8 Oletko päätyössäsi

1 työsuhteessa
2 yksityisenä ammatinharjoittajana/yrittäjänä

9 Onko päätyösi

1 vakituinen
2 määräaikainen
3 sijaisuus

10 Onko päätyösi

1 kokopäivätyö
2 osa-aikatyö (alle 30 tuntia/vk)

11 Päätoimipaikka

1 yliopistollinen sairaala
2 muu keskussairaala, mielisairaala, erikois-sairaala tai siihen verrattava sairaala
3 terveyskeskussairaala
4 terveyskeskus
5 terveyskeskuksen työterveysasema
6 muu työterveysasema
7 muu avohuolto, mielenterveystoimisto jne.
8 lääkärikeskus tai muu yksityinen vastaanotto
9 yliopisto, tutkimuslaitos
10 virasto, järjestö tms.
11 muu

12 Mikä on nimikkeesi päätoimessasi?

1 johtava lääkäri, ylilääkäri, osaston-ylilääkäri, apulaisylilääkäri
2 osastonlääkäri, erikoislääkäri
3 apulaislääkäri (tai vastaava koulutusvirka)
4 terveyskeskuslääkäri / työterveyslääkäri, normaali virkaehtosopimus
5 terveyskeskuslääkäri / työterveyslääkäri, väestövastuu virkaehtosopimus
6 muu työterveyslääkäri
7 yksityislääkäri
8 professori, apulaisprofessori
9 apulaisopettaja, tutkija, assistentti
10 muu

13 Kuinka monta vuotta olet ollut nykyisessä päätoimipaikassasi?

1 alle 1 vuotta
2 1-2 vuotta
3 3-4 vuotta
4 5-9 vuotta
5 ≥ 10 vuotta

14 Kuinka pitkä työviikkosi on nykyisellään mukaan lukien päätoimesi ja kaikki sivutoimesi (ei päivystyksiä)?

keskimäärin _____ tuntia

15 Miten kokonaistyöaikasi, mukaan luettuna sivutoimet, keskimäärin viikoittain jakaantuu?

potilastyö _____ % työajasta
hallinnolliset tehtävät _____ % ”
opetus ja tutkimus _____ % ”
täydennyskoulutus _____ % ”
muuta, mitä _____ _____ % ”
yht. 100 %

16 Paljonko käytät yhteensä aikaa sivutoimiisi?

0 ei sivutoimia
1 sivutoimiseen yksityisvastaanottoon _____ tuntia/vk
2 muihin sivutoimiin _____ lukumäärä _____ tuntia/vk

17 Kuinka suuren osan sivuansiot muodostavat kokonaisansioistasi?

_____ %

18 Millaisena pidät nykyistä ansiotasoasi päätoimessasi? Oletko

1 erittäin tyytyväinen
2 kohtalaisen tyytyväinen
3 melko tyytymätön
4 erittäin tyytymätön

19 Onko Sinulla velkaa

1 ”korvia myöten”
2 ”tilanne hallinnassa”
3 vähän tai ei lainkaan

20 Päivystyksen ja lisätyön määrä

0 en päivystä
1 minulla on aktiivipäivystystä (ns. raskas päivystyspiste)
keskimäärin _____ vrk/kk,
josta aktiivitunteja _____ tuntia/kk
2 muuta työpaikkapäivystystä
keskimäärin _____ vrk/kk,
josta aktiivitunteja _____ tuntia/kk
3 vapaamuotoista päivystystä (takapäivystys)
keskimäärin _____ vrk/kk,
josta aktiivitunteja _____ tuntia/kk
4 lisätyötä päätoimeen liittyen _____ tuntia/kk

PSYKOSOSIAALISET TYÖOLOT

21 Pidätkö työsidonnaisuuttasi

1 liian vähäisenä
2 sopivana
3 liian suurena

22 Pidätkö työtäsi tällä hetkellä

1 erittäin mielekkäänä
2 jossain määrin mielekkäänä
3 jossain määrin epämielekkäänä
4 täysin epämielekkäänä

23 Haluaisitko vaihtaa nykyisen lääkärintyösi muuhun lääkärintyöhön?

1 en
2 mahdollisesti
3 kyllä

24 Jos olisi mahdollista, vaihtaisitko lääkärin ammatin samantuloiseen toiseen ammattiin?

1 en missään tapauksessa
2 mahdollisesti
3 vaihtaisin ilman muuta

25 Palaute lääkärintyöstäsi
a) esimieheltä ja työtovereilta

1 työskentelen yksin
2 en saa mitään palautetta
3 enimmäkseen myönteistä palautetta
4 tasapuolisesti myönteistä ja kielteistä
5 enimmäkseen kielteistä

25 b) potilailta

1 en tee potilastyötä
2 en saa mitään palautetta
3 enimmäkseen myönteistä palautetta
4 tasapuolisesti myönteistä ja kielteistä
5 enimmäkseen kielteistä

26 Oletko tyytyväinen urakehitykseesi?

1 erittäin tyytyväinen
2 jokseenkin tyytyväinen
3 tyytymätön
4 erittäin tyytymätön

27 Pidätkö tieteellisen työn tekemistä oman urasi kannalta

1 erittäin tärkeänä
2 tärkeänä
3 merkityksettömänä

28 Teetkö tieteellistä tutkimusta?

1 teen tutkimustyötä päätyönäni
2 teen tutkimustyötä muun työni ohella keskimäärin _____ tuntia/vk
3 en tee lainkaan tieteellistä tutkimusta

29 Onko Sinulla väitöskirja tekeillä?

1 ei
2 kyllä
3 olen väitellyt

30 Kuinka paljon arvioit käyttäväsi keskimäärin viikossa aikaa ammattikirjallisuuden ja -lehtien lukemiseen?

0 en yhtään
1 työaikana _____ tuntia/vk
2 vapaa-aikana _____ tuntia/vk

31 Kuinka monta päivää olet yhteensä ollut kursseilla, koulutuksessa tai kongresseissa viimeisten 12 kuukauden aikana?

0 en yhtään
1 työaikana _____ pv
2 vapaa-aikana _____ pv

32 Onko lähityöyhteisösi ilmapiiri

1 erittäin hyvä
2 kohtalainen
3 huono
4 työskentelen yksin

33 Miten tulet työssäsi toimeen
a) työtovereittesi kanssa

1 erittäin hyvin
2 kohtalaisesti
3 huonosti
4 työskentelen yksin

33 b) esimiehesi kanssa

1 erittäin hyvin
2 kohtalaisesti
3 huonosti
4 työskentelen yksin tai olen esimies

34 Henkisellä väkivallalla tarkoitetaan jatkuvaa, toistuvaa kiusaamista, sortamista tai loukkaavaa kohtelua. Oletko aiemmin tuntenut olevasi tai oletko tällä hetkellä henkisen väkivallan ja kiusaamisen kohteena omassa työssäsi?

1 en
2 kyllä tällä hetkellä
3 kyllä aiemmin, en enää

35 Tunnetko olevasi työssäsi yksin?

1 en koskaan
2 joskus
3 usein
4 aina

36 Onko Sinulla mahdollisuus konsultoida toista lääkäriä työyksikössäsi?

1 riittävästi
2 liian vähän
3 ei lainkaan

37 Onko sinun vaikea tehdä päätöksiä työssäsi?

1 ei koskaan
2 joskus
3 usein
4 aina

38 Miten paljon voit vaikuttaa seuraaviin asioihin työssäsi?

	paljon	melko paljon	jonkin verran	en lainkaan
a) siihen, mitä työtehtäviisi kuuluu	4	3	2	1
b) siihen, missä järjestyksessä teet työsi	4	3	2	1
c) ajankäyttöösi	4	3	2	1
d) työtahtiisi	4	3	2	1
e) työmenetelmiisi	4	3	2	1
f) siihen, miten työt jaetaan ihmisten kesken	4	3	2	1
g) siihen, keiden kanssa työskentelet	4	3	2	1
h) laitehankintoihin	4	3	2	1

39 Tuntuuko Sinusta siltä, että joudut omaksumaan kohtuuttoman paljon uusia asioita selviytyäksesi työtehtävistäsi tai kehittyäksesi niissä?

1 jatkuvasti/erittäin usein
2 melko usein
3 silloin tällöin
4 melko harvoin
5 ei koskaan

40 Mikä seuraavista vaihtoehdoista kuvaa parhaiten valmiuksiasi työssäsi?

1 tarvitsisin lisäkoulutusta selvitäkseni hyvin työtehtävistäni
2 työtehtäväni vastaavat hyvin tämän hetkisiä valmiuksiani
3 minulla olisi valmiuksia selviytyä vaativammistakin tehtävistä

41 Osallistutko tai oletko osallistunut työnohjaukseen (esim. Balint tms.)?

1 osallistun nykyisin
2 olen osallistunut aiemmin, mutta en nykyisin
3 toivoisin työnohjausta, mutta sitä ei ole tarjolla
4 en koe tarvitsevani työnohjausta

42 Kuinka paljon seuraavia seikkoja/asioita esiintyy työyksikössäsi?

	paljon	melko paljon	jonkin verran	ei lainkaan
a) kilpailuhenkeä	4	3	2	1
b) esimiesten ja alaisten välisiä ristiriitoja	4	3	2	1
c) työntekijöiden välisiä ristiriitoja	4	3	2	1
d) eri henkilöstöryhmien välisiä ristiriitoja	4	3	2	1

43 Onko työtahtisi viime vuosina mielestäsi

1 kiristynyt huomattavasti
2 kiristynyt jonkin verran
3 pysynyt ennallaan (siirry kysymykseen 45)
4 keventynyt jonkin verran (siirry kysymykseen 45)
5 vai keventynyt huomattavasti (siirry kysymykseen 45)

44 Miksi työtahti on mielestäsi kiristynyt?

	pitää paikkansa	ei pidä paikkaansa
a) työtehtävät (esim. asiakkaat/ potilaat) ovat lisääntyneet	1	2
b) työtehtävien alue on laajentunut	1	2
c) työtehtävät ovat vaikeutuneet	1	2
d) tulostavoitteet ovat tiukentuneet	1	2
e) tulosseuranta on tehostunut	1	2
f) uuden tiedon omaksumis-vaatimukset ovat kasvaneet	1	2
g) henkilöstöä on vähemmän suhteessa työmäärään	1	2
h) tietokoneet ovat lisänneet työtahtia	1	2
i) lama on vaikuttanut työtahtia kiristävästi	1	2
j) odottamattomat muutokset ovat kiristäneet työtahtia	1	2
k) tilapäisiin poissaoloihin ei saada sijaisia	1	2
l) kilpailu asiakkaista/potilaista ja töistä lisää työpaineita	1	2
m) muu syy_____		

45 Jos joudut jäämään äkillisesti pois työstä (esim. sairastuttuasi tai lapsen sairauden vuoksi), miten työsi yleensä hoidetaan poissaollessasi?

1 en ole koskaan jäänyt pois työstä
2 tilalleni palkataan sijainen
3 työt jaetaan työtovereiden kesken
4 hoidan työt itse palattuani töihin
5 työt jäävät kokonaan tekemättä

TYÖYMPÄRISTÖHAITAT

46 Onko työsi ruumiillisesti

1 kevyttä
2 melko kevyttä
3 jonkin verran rasittavaa
4 melko rasittavaa
5 hyvin rasittavaa

47 Sisältyykö työhösi kumarassa tai selkä muuten hankalassa asennossa työskentelyä?

0 ei lainkaan
1 päivittäin yli 4 tuntia
2 päivittäin 1 - 4 tuntia
3 päivittäin alle tunti
4 muutamana päivänä viikossa yli 4 tuntia
5 muutamana päivänä viikossa 1 - 4 tuntia
6 vain satunnaisesti

48 Sisältyykö työhösi työskentelyä toinen tai molemmat kädet hartiatason yläpuolella tai muuten sellaisessa asennossa, jossa kättä joutuu kannattelemaan?

0 ei lainkaan
1 päivittäin yli 4 tuntia
2 päivittäin 1-4 tuntia
3 päivittäin alle tunti
4 muutamana päivänä viikossa yli 4 tuntia
5 muutamana päivänä viikossa 1 - 4 tuntia
6 vain satunnaisesti

49 Esiintyykö työpaikallasi homeen tai maakellarin hajua tai onko siellä todettu homevauriota?

1 ei
2 kyllä nykyisin
3 kyllä aiemmin, ei enää

50 Millaisena koet seuraavat vaarat työssäsi?

	koen selvänä vaarana	ajattelen silloin tällöin	en koe vaarana lainkaan
a) tapaturmavaara	3	2	1
b) väkivallan kohteeksi joutumisen vaara	3	2	1
c) kemiallisista aineista aiheutuvat vaarat	3	2	1
d) säteilyvaara	3	2	1
e) suuronnettomuusvaara	3	2	1
f) sairauksien tartuntavaara	3	2	1
g) käsi-ihottumaan sairastumisvaara	3	2	1
h) kulumasairaus-/ rasitusvammavaara	3	2	1
i) syöpään sairastumisvaara	3	2	1
j) mielenterveyden järkkyminen	3	2	1
k) vakava työuupuminen	3	2	1
l) tapaturman aiheuttaminen toiselle	3	2	1
m) arvokkaan laitteen tai työtuloksen turmeleminen	3	2	1

51 Oletko työssäsi joutunut viimeisten 12 kuukauden aikana fyysisen väkivallan tai uhkailun kohteeksi?

1 en
2 pelkästään uhkailun kohteeksi
3 myös väkivallan kohteeksi

52 Kuinka monta kertaa olet viimeisen 12 kuukauden aikana saanut työssäsi ihosi penetroivan tai limakalvojen tapaturmaisen verikontaktin potilaasta (esim. neulanpisto, viiltohaava, roiskeet silmään)?

0 en kertaakaan
1 1-5 kertaa
2 6-10 kertaa
3 yli 10 kertaa

53 Onko rokotussuojasi ajantasalla seuraavien sairauksien osalta?

	kyllä	ei	en osaa sanoa
a) tetanus	1	2	9
b) difteria	1	2	9
c) polio	1	2	9
d) hepatiitti A	1	2	9
e) hepatiitti B	1	2	9
f) entä oletko ottanut tai aiotko ottaa tänä syksynä influenssarokotteen?	1	2	9

STRESSI JA BURN OUT

54 Mikä mielestäsi aiheuttaa Sinulle eniten stressiä?

1 työ
2 perheasiat
3 työ- ja perheasioiden yhteensovittaminen
4 terveydentila
5 taloudellinen tilanne
6 muu, mikä _____

55 Oletko tällä hetkellä mielestäsi stressaantunut?

1 en
2 jossain määrin
3 selvästi

56 Onko stressinsietokykysi viime vuosina mielestäsi

1 vähentynyt selvästi
2 vähentynyt jonkin verran
3 ollut muuttumaton
4 lisääntynyt

57 Mikä työssäsi aiheuttaa Sinulle stressiä? (merkitse viivoille kolme tärkeintä numeroilla 1-3)

a) ei yleensä mikään ____
b) liiallinen työmäärä ____
c) kiire ____
d) vastuu ____
e) potilaan hoitoa koskevat päätökset ____
f) "vaikeat" potilaat ____
g) hallinnolliset tehtävät ____
h) todistukset, lausunnot yms. ____
i) päivystys ____
j) työolot (esim. kilpailu) ____
k) epävarmuus työn jatkumisesta ____
l) työpaikan ihmissuhteet ____
m) muu, mikä _____ ____
_____ ____
_____ ____

58 Minkälaisin toimenpitein stressiä lääkärin työssä voitaisiin mielestäsi parhaiten lieventää olettaen, ettei tulotaso muuttuisi? (merkitse viivoille kolme tärkeintä numeroilla 1-3)

a) ei milläänä ____
b) päivittäistä työaikaa vähentämällä ____
c) päivystysvelvollisuutta pienentämällä ____
d) vuotuista loma-aikaa pidentämällä ____
e) tarkoituksenmukaisilla tehtäväjärjestelyillä ____
f) lääkärien peruskoulutusta kehittämällä ____
g) täydennyskoulutusta lisäämällä ____
h) työnohjausta kehittämällä ____
i) eläkeikää varhentamalla ____
j) muunlaisin toimenpitein, miten _____ ____
_____ ____
_____ ____

59 Kuinka pian yleensä nukahdat illalla nukkumaan mennessäsi?

1 alle 10 minuutissa
2 alle puolessa tunnissa
3 alle tunnissa
4 yli tunnin valvomisen jälkeen

60 Tunnetko itsesi väsyneeksi normaaleissa päivätoimissasi (paitsi päivystyksen jälkeen)?

1 en koskaan
2 joskus
3 melko usein
4 lähes aina

61 Kuinka usein seuraavat väitteet koskevat itseäsi? Vastaa jokaiseen kohtaan käyttämällä seuraavaa asteikkoa:

1 = ei koskaan
2 = muutaman kerran vuodessa
3 = kerran kuukaudessa
4 = muutaman kerran kuukaudessa
5 = kerran viikossa
6 = muutaman kerran viikossa
7 = joka päivä

a) Tunnen olevani henkisesti tyhjiin puserrettu työstäni. ___
b) Työpäivän päättyessä tunnen olevani aivan lopussa. ___
c) Olen väsynyt jo aamulla tietäessäni, että minun pitää kohdata uusi työpäivä. ___
d) Minun on helppo ymmärtää, miltä potilaistani/asiakkaistani tuntuu. ___
e) Tunnen kohtelevani joitakin potilaita/asiakkaita ikäänkuin he olisivat esineitä. ___
f) Jatkuva työskentely ihmisten parissa on minulle todella rasittavaa. ___
g) Käsittelen potilaitteni/asiakkaitteni ongelmia erittäin hyvin tuloksin. ___
h) Tunnen olevani lopen uupunut työstäni. ___
i) Tunnen vaikuttavani myönteisesti ihmisten elämään työni kautta. ___
j) Olen tunteettomampi ihmisiä kohtaan kuin mitä olin aloittaessani tämän työn. ___
k) Olen huolissani, että tämä työ kovettaa minua. ___
l) Tunnen olevani täynnä energiaa. ___
m) Työni turhauttaa minua. ___
n) Tunnen tekeväni liikaa työtä. ___
o) En oikeastaan välitä siitä, miten joidenkin potilaiden/asiakkaiden käy. ___
p) Työskentely välittömästi ihmisten kanssa stressaa minua työssäni liikaa. ___
q) Pystyn helposti luomaan leppoisan ilmapiirin potilaitteni/asiakkaitteni kanssa. ___
r) Tunnen itseni iloiseksi työskenneltyäni kiinteästi potilaitteni/asiakkaitteni kanssa. ___
s) Olen saanut aikaan monia arvokkaita asioita tässä työssä. ___
t) Tunnen olevani kestokykyni rajoilla. ___
u) Pystyn suhtautumaan tyynesti henkisiin ongelmiin työssäni. ___
v) Tunnen, että potilaat/asiakkaat syyttävät minua joistakin ongelmistaan. ___

62 Tunnetko saavasi työstäsi tyydytystä?

1 en koskaan
2 joskus
3 usein
4 lähes päivittäin

63 Herättävätkö potilaat Sinussa aggressioita?

1 ei yleensä
2 joskus
3 usein
4 lähes aina

64 Onko Sinun vaikea keskustella luontevasti potilaittesi kanssa?

1 ei yleensä
2 joskus
3 usein
4 lähes aina

65 Pelkäätkö epäonnistumisia potilaittesi hoidossa?

1 en yleensä
2 joskus
3 usein
4 lähes aina

66 Ajatteletko valituksen, kanteen tai syytteen kohteeksi joutumista?

1 en yleensä
2 joskus
3 usein
4 lähes aina

67 Jos olet ollut kohtuuttoman uupunut, mitä olet tehnyt? Rengasta yksi tai useampi vaihtoehto.

1 en ole ollut kohtuuttoman uupunut
2 en mitään, odotellut tilanteen paranemista
3 käyttänyt anksiolyyttistä tai vastaavaa lääkitystä
4 käyttänyt alkoholia
5 keskittynyt harrastuksiin, liikuntaan tms.
6 ottanut lomaa
7 ollut sairauslomalla
8 tehnyt muutoksia työjärjestelyihini
9 vähentänyt työmäärääni
10 tehnyt alotteita työnantajalle työjärjestelyistä
11 kääntynyt kollegan puoleen
12 muuta, mitä _____

_____

68 Kuinka monta viikkoa vuosilomaa olet pitänyt viimeisen 12 kuukauden aikana?

_____ viikkoa

69 Kuinka suuren osan tästä lomastasi vietit täysin erossa työstä, rentoutuen perheen/ystävien/harrastusten parissa?

1 suurimman osan
2 alle puolet
3 en lainkaan

70 Ovatko suhteesi läheisiisi (perheeseesi, ystäviisi) muuttuneet viime vuosina?

1 muuttuneet läheisemmiksi
2 säilyneet kutakuinkin ennallaan
3 huonontuneet

71 Ovatko koti- ja perheasiasi mielestäsi

1 täysin kunnossa
2 jokseenkin kunnossa
3 jossakin määrin huolestuttavat
4 huolestuttavat

72 Onko perheesi tai lähimpiesi piirissä tapahtunut huomattavia muutoksia viimeksi kuluneen vuoden aikana (esim. kuolema, avioero, vakava sairaus tai kriisi)?

1 ei
2 kyllä

73 Joudutko työsi takia laiminlyömään läheisiäsi?

1 en
2 melko vähän
3 paljon

74 Oletko yleensä tyytyväinen elämääsi?

1 hyvin tyytyväinen
2 kohtalaisen tyytyväinen
3 melko tyytymätön
4 hyvin tyytymätön

ALKOHOLIN KÄYTTÖ

75 Miten paljon keskimäärin olet nauttinut alkoholijuomia viimeksi kuluneen vuoden aikana?
a) Olut

1 en yhtään
2 pullollisen tai vähemmän viikossa
3 2- 4 pullollista viikossa
4 5-12 pullollista viikossa
5 13-24 pullollista viikossa
6 25-47 pullollista viikossa
7 48- pullollista viikossa

b) Viini

1 en yhtään
2 enintään lasillisen viikossa
3 2-4 lasillista viikossa
4 1-2 pullollista (=3/4 l pullo) viikossa
5 3-4 pullollista viikossa
6 5-6 pullollista viikossa
7 7- pullollista viikossa

c) Väkevät

1 en yhtään
2 enintään lasillisen (4 cl) viikossa
3 2-6 lasillista viikossa
4 pullollisen (puoli litraa) viikossa
5 2-3 pullollista viikossa
6 4- pullollista viikossa

76 Kuinka usein keskimäärin nautit alkoholia?

1 en koskaan
2 korkeintaan muutaman kerran vuodessa
3 ainakin kerran kuukaudessa
4 kerran viikossa
5 2 kertaa viikossa
6 3 kertaa viikossa tai useammin
7 päivittäin

77 Onko alkoholinkäyttösi viimeksi kuluneiden vuosien aikana

1 vähentynyt
2 pysynyt ennallaan
3 lisääntynyt

78 Oletko itse joskus ajatellut käyttäväsi kohtuuttomasti alkoholia?

1 en
2 kyllä

79 Oletko miettinyt alkoholinkäyttösi lopettamista kokonaan?

1 en
2 joskus
3 usein

80 Oletko ollut alkoholinkäytön yhteydessä humalassa viimeksi kuluneen vuoden aikana?

1 en kertaakaan
2 kerran
3 2-3 kertaa
4 4- 6 kertaa
5 7-12 kertaa
6 13- kertaa

81 Oletko sammunut alkoholinkäytön yhteydessä viimeksi kuluneen vuoden aikana?

1 en kertaakaan
2 kerran
3 2-3 kertaa
4 4- kertaa

82 Onko Sinulla joskus ollut amnesiaa juomisen yhteydessä?

1 ei
2 kyllä

83 Onko Sinulla ollut krapula viimeksi kuluneen vuoden aikana?

1 ei
2 1-2 kertaa
3 3-5 kertaa
4 6- kertaa

84 Oletko ottanut krapularyypyn viimeksi kuluneen vuoden aikana?

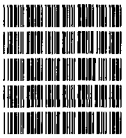
1 en kertaakaan
2 1-2 kertaa
3 3-5 kertaa
4 6- kertaa

85 Oletko koskaan juonut kahtena tai useampana päivänä peräkkäin selviämättä välillä?

1 en koskaan
2 satunnaisesti
3 usein

TERVEYDENTILA JA TERVEYSKÄYTTÄYTYMINEN

86 Onko oma terveydentilasi nykyisin mielestäsi?



1 hyvä
2 melko hyvä
3 keskitasoinen
4 melko huono
5 huono

87 Onko Sinulla viimeksi kuluneen vuoden (12kk) aikana ollut seuraavia sairauksia, ja kuinka olet niitä hoitanut?

	ei	kyllä, hoitanut itse	kyllä, ollut toisen lääkärin hoidossa
a) kohonnut verenpaine, verenpainetauti	1	2	3
b) sydäninfarkti	1	2	3
c) sepelvaltimotauti, angina pectoris	1	2	3
d) sydämen vajaatoiminta	1	2	3
e) sokeritauti	1	2	3
f) kilpirauhasen toimintahäiriö	1	2	3
g) mielenterveydenhäiriö	1	2	3
h) neurologinen sairaus	1	2	3
i) astma	1	2	3
j) krooninen bronkiitti, keuhkolaajentuma	1	2	3
k) ruoansulatuselimistön sairaus	1	2	3
l) krooninen virtsatietulehdus, munuaistulehdus	1	2	3
m) raskauteen liittyvä häiriö	1	2	3
n) pitkäaikainen ihottuma	1	2	3
o) nivelreuma	1	2	3
p) selkäsairaus	1	2	3
q) artroosi	1	2	3
r) muu pitkäaikainen sairaus, mikä _____	1	2	3

88 Onko jokin seuraavista oireista vaivannut Sinua ja kuinka usein viimeksi kuluneen vuoden aikana?

	harvoin tai ei koskaan	silloin tällöin	aika usein	usein tai jatkuvasti
a) gastriitti- tai ulkusoireet	1	2	3	4
b) ruokahaluttomuus	1	2	3	4
c) pahoinvointi tai oksentelu	1	2	3	4
d) vatsakivut	1	2	3	4
e) colon irritabile	1	2	3	4
f) niska-hartianseudun kivut	1	2	3	4
g) lanne-ristiselän säryt	1	2	3	4
h) nukahtamisvaikeudet tai unettomuus	1	2	3	4
i) heräämisvaikeudet tai päiväaikainen väsymys	1	2	3	4
j) painajaiset	1	2	3	4
k) muskulotensiivinen päänsärky	1	2	3	4
l) migreeni	1	2	3	4
m) seksuaalinen haluttomuus	1	2	3	4
n) huimaus	1	2	3	4
o) takykardia tai epäsäännöllinen sydämen toiminta	1	2	3	4
p) tremor käsissä	1	2	3	4
q) liiallinen hikoilu ilman fyysistä ponnistelua	1	2	3	4
r) dyspnea ilman fyysistä ponnistelua	1	2	3	4
s) energian puute	1	2	3	4
t) depressio	1	2	3	4
u) väsymys tai heikkous	1	2	3	4
v) ahdistus tai hermostuneisuus	1	2	3	4
w) ärtyvyys tai vihanpuuskat	1	2	3	4

89 Montako kertaa viimeksi kuluneen vuoden (12 kk) aikana olet käynyt potilaana lääkärin vastaanotolla (myös terveystarkastukset lasketaan mukaan)?

0 en kertaakaan
1 yhden kerran
2 2-3 kertaa
3 4-5 kertaa
4 ≥6 kertaa

90 a) Onko Sinulta viiden viime vuoden aikana todettu patologisia arvoja laboratoriotutkimuksissa?

1 en ole käynyt laboratoriotutkimuksissa
2 olen käynyt, ei ole todettu patologisia arvoja
3 on todettu patologisia arvoja

b) Patologiset arvot ovat olleet seuraavissa:

1 S-triglyseridit
2 S-kolesteroli
3 S-glukoosi
4 perusverenkuva
5 maksaentsyymit
6 Papa-näyte
7 muu, mikä _____

91 Paljonko painat?

_____kg

92 Entä kuinka pitkä olet?

_____cm

93 Oletko viimeksi kuluneen vuoden aikana ollut sairauslomalla?

1 en
2 sairauslomalla/-lomilla yhteensä _____ vrk
diagnoosi/diagnoosit _____
_____
_____

94 Montako kupillista kahvia juot vuorokaudessa?

0 en yhtään
1 1-2 kupillista
2 3-4 kupillista
3 5-6 kupillista
4 7-8 kupillista
5 ≥ 9 kupillista

95 a) Tupakoitko

1 en ole koskaan aloittanutkaan
2 olen lopettanut _____ vuotta sitten,
tupakoituani _____ vuotta
3 tupakoin nykyisin satunnaisesti
4 tupakoin nykyisin säännöllisesti

95 b) Montako savuketta, sikaria tai piipullista vuorokaudessa tavallisesti poltat tai poltit ennen lopettamista?

1 1-10 savuketta
2 11-20 savuketta
3 21-40 savuketta
4 41- savuketta

96 Mainitse kolme tärkeintä harrastustasi

_____
_____
_____

97 Kuinka usein harrastat vapaa-ajan liikuntaa vähintään puoli tuntia niin, että ainakin lievästi hengästyt ja hikoilet?

1 3 kertaa tai useammin viikossa
2 1-2 kertaa viikossa
3 1-3 kertaa kuukaudessa
4 muutaman kerran vuodessa tai harvemmin

98 Käytätkö beetasalpaajia jännitysoireisiin?

1 en koskaan
2 satunnaisesti
3 melko usein
4 jatkuvasti

99 Käytätkö bentsodiatsepiineja?

1 en koskaan
2 satunnaisesti
3 melko usein
4 jatkuvasti

100 Käytätkö muita rauhoittavia lääkkeitä?

1 en koskaan
2 satunnaisesti
3 melko usein
4 jatkuvasti

101 Käytätkö psykostimulantteja?

1 en koskaan
2 satunnaisesti
3 melko usein
4 jatkuvasti

102 Käytätkö muita kuin edellä mainittuja lääkkeitä säännöllisesti tai usein?

1 en käytä
2 käytän; seuraaviin sairauksiin/oireisiin (merkitse rastilla)

__a) hypertoniaan
__b) sepelvaltimotautiin
__c) sydämen vajaatoimintaan
__d) arytmiaan
__e) ruoansulatuskanavan oireisiin tai sairauksiin
__f) depressioon
__g) muihin mielenterveyden häiriöihin
__h) sokeritautiin
__i) kilpirauhasen sairauksiin
__j) astmaan
__k) krooniseen bronkiittiin
__l) neurologisiin oireisiin tai sairauksiin
__m) nivelreumaan
__n) muihin särkytiloihin
__o) unettomuuteen
__p) vaihdevuosioireisiin
__q) muuhun, mihin? _____

103 Yleisesti arvioidaan, että väestöstä joka kymmenennellä on mielessään itsemurha-ajatuksia. Oletko Sinä joskus vakavasti miettinyt tai suunnitellut itsemurhaa?

1 en koskaan
2 olen ajatellut
3 olen vakavasti suunnitellut
4 olen yrittänyt

104 Mitä mieltä olet käynnistymässä olevasta luottamuslääkärijärjestelmästä?

1 pidän kehittämisen arvoisena
2 en pidä tarpeellisena
3 en osaa sanoa

PERHESUHTEET

105 Lasten ikä ja lukumäärä

1 ei lapsia
2 on lapsia
a) 0-3 v _____ c) 7-14 v _____
b) 4-6 v _____ d) 15- v _____

106 Oletko

1 naimisissa tai avoliitossa
2 naimaton (siirry kysymykseen 110)
3 asumuserossa (siirry kysymykseen 110)
4 eronnut (siirry kysymykseen 110)
5 leski (siirry kysymykseen 110)

107 Mikä on puolisosi/avopuolisosi ammatti?

_____

108 Onko puolisosi/avopuolisosi nykyisin:

1 kokopäivätyössä
2 osa-aikatyössä (alle 30 tuntia/vk)
3 väliaikaisesti poissa töistä (isyys- tai äitiyslomalla, vanhempainlomalla tai hoitovapaalla, opiskelija)
4 hoitaa omaa kotitaloutta
5 työtön
6 eläkkeellä
7 tekee jotain muuta

109 Miten seuraavat väittämät pitävät kohdallasi paikkansa?

	pitää täysin paikkansa	pitää jokseenkin paikkansa	ei juurikaan pidä paikkaansa	ei lainkaan pidä paikkaansa
a) puolisoni tekee mielestäni liikaa töitä	1	2	3	4
b) puolisoni mielestä minä teen liikaa töitä	1	2	3	4

110 Ihmiset joutuvat kotona ja työssä joskus vaikeasti yhteen sovitettavien vaatimusten kohteeksi. Seuraavassa on joitakin väittämiä tällaisista ongelmista. Pitävätkö ne Sinun kohdallasi paikkansa?

	pitää täysin paikkansa	pitää jokseenkin paikkansa	ei juurikaan pidä paikkaansa	ei lainkaan pidä paikkaansa	ei koske minua
a) kun tulen kotiin, lakkaan kokonaan ajattelemasta työtäni	1	2	3	4	9
b) minun on vaikea keskittyä työhöni kotiasioiden vuoksi	1	2	3	4	9
c) tunnen laiminlyöväni kotiasioita ansiotyön vuoksi	1	2	3	4	9
d) työssäni tunnen olevani vapaa perheestä ja sen hälinästä	1	2	3	4	9
e) perhe saa joskus jäädä syrjään, koska antaudun täysin työlleni	1	2	3	4	9

111 Jos ajattelet elämääsi taaksepäin, oletko tehnyt tietoisia "kompromisseja" joko työn tai perheen hyväksi tilanteessa, jossa näiden yhteensovittaminen on tuntunut vaikealta?

Oletko	kyllä	en	ei koske minua
a) rajoittanut haluamaasi lasten lukumäärää työhön tai työssä käyntiin liittyvistä syistä?	1	2	9
b) lykännyt lasten hankkimista työhösi liittyvistä syistä?	1	2	9
c) luopunut työpaikasta aviopuolison työn edellyttämän paikkakunnalta muuton vuoksi?	1	2	9
d) luopunut lisä-, jatko- tai täydennyskoulutusmahdollisuuksista perheen vuoksi?	1	2	9
e) työskennellyt vain osa-aikaisesti perheen vuoksi?	1	2	9

TYÖKYVYN YLLÄPITO

112 Seuraavassa on lueteltu joitakin työkykyä ylläpitäviä keinoja. Mitä niistä pidät itsellesi tarpeellisina?

	hyvin tarpeellista	melko tarpeellista	vaikea sanoa	melko tarpeetonta	täysin tarpeetonta
a) yrityksen/työnantajan kustantama ammattitaitoa edistävä koulutus	1	2	3	4	5
b) työskentelytilan ja työasentojen parantaminen	1	2	3	4	5
c) työjärjestelyjen muutokset, esim. tiimityö, työnkierto	1	2	3	4	5
d) työaikojen joustot	1	2	3	4	5
e) osa-aikatyö, osa-aikaeläke	1	2	3	4	5
f) johtamisen kehittäminen	1	2	3	4	5
g) työnohjaus	1	2	3	4	5
h) laitoskuntoutus	1	2	3	4	5
i) avokuntoutus	1	2	3	4	5

TYÖTERVEYSHUOLTO

113 Onko Sinulle järjestetty työterveyshuolto?

1 ei (siirry kysymykseen 117)
2 kyllä
9 en osaa sanoa (siirry kysymykseen 117)

114 Montako kertaa olet käynyt työpaikkasi työterveyshuollon vastaanotolla viimeisen kolmen vuoden aikana? (merkitse 0 jos et ole käynyt kertaakaan)

a) sairausvastaanotolla _____
b) terveystarkastus- tms. käynnillä _____

115 Jos et ole käynyt kertaakaan työterveyshuollon vastaanotolla, niin miksi et?

1 ei ole ollut tarvetta
2 olen hoitanut terveyspalveluni muualla
3 muu syy, mikä _____

116 Onko joku työterveyshuollon henkilöstöstä, esim. lääkäri, työterveyshoitaja tai fysioterapeutti, käynyt työpaikallasi perehtymässä työoloihisi?

1 ei
2 kyllä
9 en osaa sanoa

117 Miten mielestäsi lääkärien työterveyspalveluja tulisi kehittää?

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