

Work-Family Conflict among Female and Male Physicians in Hungary: Prevalence, Stressor Predictors and Potential Consequences on Physicians' Well-Being

by

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LIST OF ABBREVIATIONS

df	Degree of freedom
GHQ	General Health Questionnaire
GnRH	Gonadotropin releasing hormone (GnRH)
MBI-HSS	Maslach Burnout Inventory-Human Services Survey
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders (4 th Edition)
SD	Standard deviation
WFC	Work-family conflict

CHAPTER ONE

INTRODUCTION

1.1 Preamble

In recent years, there has been considerable research on the work-family interface due to the growing number of women in the labour force and their mounting responsibilities at work and at home (Geurts & Demerouti, 2003). Balancing work and family life has become increasingly challenging in Hungary, too, as more women assume the non-traditional 'breadwinner' role but at the same time are expected to retain their 'caregiver' or 'homemaker' roles. As demonstrated by a recent pan-European study, the prevalence of difficulties in fulfilling family responsibilities and household work due to tiredness caused by long working hours was 14% and 30%, respectively, among Hungarian employees compared with the European Union average of 10% and 23%, respectively (European Foundation for the Improvement of Living and Working Conditions, 2005).

The health and well-being of physicians is causing some concern. Important aspect of general well-being such as balancing work and home lives and reducing conflicting relationships between the home and work domains are crucially important not only to female and male physicians that strive to deliver their work with the highest possible quality, but also to the organizations and governments that employ them and are concerned with work performance and national health, to the families that rely on them as family members, and to the patients that expect high quality service from them. Despite the seemingly important nature of work-home balance and the high number of stake holders that represent the whole society, there is no sound empirical data available to guide social discourse on this topic in Hungary. Therefore, the central aim of the research presented herein was to explore the prevalence of and antecedents to the conflict between the work and home domains and to investigate its relations to psychological and somatic health as well as well-being of physicians, in particular of female doctors, in Hungary. The results presented herein may provide a basis for initiation of social discourse in order to improve the working conditions and health of physicians and to facilitate the development and implementation of appropriate coping mechanisms and human resource as well as social and organizational policy.

1.2 The increasing importance of the work-home interface

The conception of research on the work-home interface can be traced back to the work of Renshaw (1976), Kanter (1977), and Pleck (1977), who stipulated that both work and home lives claim time and energy. Work is an important source of financial security and status, whereas the home and family function as a source of support and intimacy. As work and home/family are not independent constructs (Kanter, 1977), balancing work and home lives can be difficult and may lead to conflict between the two domains. Since the pivotal research by Pleck (1977), it has been generally accepted that the work and home domains influence each other both positively and negatively: time, energy, stress, and behaviours spill over between the two domains (Greenhaus & Beutell, 1985).

Scientific interest in the relationship between employees' work and home lives has substantially grown since the mid 80s. Because of its potential adverse impact on employees' well-being and subsequently on their performance, the interdependence between both domains is increasingly recognized by social scientists, governments and employers due to significant socio-economic changes and the increasing demands on today's employees (Frone, Russell, & Cooper, 1997).

Continued influx of women into the labour market has significantly altered the profile of the labour force. It has resulted in a change in many women's responsibilities and priorities, as well as in acquiring new attitudes toward work and the role it should play in their lives. Employers are also facing new challenges in their approach to people management, as competitive pressures drive them to streamline and to demand greater output from a smaller workforce, which is subjected simultaneously to greater demands in the non-work (home) domain.

The following sections summarize major socio-economic changes and/or characteristics in the Hungarian society and their potential long-term effects on the work-home interface impacting women in general and female physicians in particular.

1.2.1 The traditional nature of the Hungarian society: gender role orientation

A gender role is defined as a set of perceived behavioural norms associated particularly with males or females, in a given social group or system. It can manifest itself, for example, in division of labour by gender. Gender is one component of the gender/sex system, which refers to “the set of arrangements by which a society transforms biological sexuality into products of human activity, and in which these transformed needs are satisfied” (Reiter, 1975). Almost all societies have a gender/sex system, although the components of this system vary markedly from society to society. Individuals acquire gender roles through socialization.

Although there are no data on gender role orientation among female physicians in particular, there is a substantial body of evidence on gender role ideation among the general population in Hungary. Empirical research demonstrated that the Hungarian society could be considered traditional in terms of division of labour, family values, marriage, and child-rearing. Hungarians consider the family to be more important than career or self-realization. Married people have usually been considered happier than unmarried ones, and the family has generally been thought of as the most important (if not the only) environment in which solidarity and support can be expressed (S. Molnár, 1994; Tóth, 2006).

In a recent study conducted in 12 European countries between 2000 and 2003, Pongrácz (2006) confirmed that the Hungarian society, both in comparison with Western and Eastern European countries, exhibits markedly traditional characteristics. These manifested themselves primarily in the declaration of primacy of family over work by women and men irrespective of age or level of education, in division of household work reflecting traditional gender roles, and in resistance to the idea of switching between gender roles (i.e., women as breadwinner and men as home-makers). Given the Hungarian society’s very family-oriented value system, balancing female gender roles

and work, which is an economic necessity for many women in Hungary, is proving to be an increasingly difficult problem in Hungary in the years to come leading to conflict between the home and work domains. Alarming, women and men in Hungary do not consider a more egalitarian distribution of domestic labour to be the solution to this conflict. Rather, they believe that the conflict can be minimised by continued promotion and institutionalization of traditional gender roles (Pongrácz & S. Molnár, 1994).

1.2.2 Population ageing

Balancing demands in the work and home domains may be increasingly difficult owing to population ageing. Population ageing in Hungary, as in other developed countries, began at the beginning of the 20th century. At that time, Hungary's population was very young in demographic terms. Nearly half of the population was below 20 years of age. Between 1901 and 1949, the number of Hungarians aged 60 and over increased almost two-fold, from 514,000 to 1,073,000. Over the next 52 years, it has doubled again, reaching 2,079,000 in 2001. This increase was much faster than the rise of the number of those in working ages or the growth of the total population. The mean age of the Hungarian population has increased from 34 in 1960 to almost 40 in 2002. The continuing low rate of fertility has resulted in an age distribution characterized by an overrepresentation of people in their prime working years, and a diminishing pool of young adults aged 15-24, mostly and sharply after the 1960s (Hablicsek, 2000; Klinger, 2002).

Population ageing means not only the rising number of older people, but also their growing proportions relative to the total population, and, obviously, the converse: the shrinking proportions of younger age groups. In Hungary, the proportion of those under 20 fell from 44.9% to 23.1% during the last century. The ratio of people aged 60 and over increased from 7.5% to 20.4%. The latest projections indicate that the population aged 60 and over is expected to grow by about one million up to the middle of the century, to reach 2,941,000 by 2050. This is expected to make up 33.6% of the

projected total population. By 2050, the number of the elderly is projected to be 80% over the number of children (Hablicsek, 2000; Klinger, 2002).

The new phenomenon of shrinking labour force poses new challenges for the society. Forecasts suggest that the shrinking of the labour force entry pool will continue into the next few decades. Hungary's current population of around 10 million will fall by as much as 20% over the next 50 years (Burns & Cekota, 2002). The share of those in working ages is expected to drop below 50%, while their number will fall to a pre-World War I level of only 4 million. In order to counteract the effects of population ageing, solutions must be sought both at the demographic and the economic levels. These can be to redefine the old-age limit, to promote active ageing and to raise the effective age for pension. A further economic strategy can be to accelerate progress in the field of technology, productivity and human capital (Hablicsek, 2000; Klinger, 2002).

Another demographic-economic strategy can be to increase labour force participation. As the pool of traditional labour force entrants declines, forecasts indicate an increased reliance on women as a source of labour. However, women in Hungary are unlikely to give up their non-work roles (e.g., mother, wife, care-giver, etc.) in the foreseeable future due to the traditional nature of the society and its continued reinforcement through socialization. With the ageing of the population, care giving has been extended to include not only children, but also elderly and disabled family members. These demographic and social changes translate into a variety of new challenges for today's professional women as they struggle to cope with the often competing pressures of work demands and family responsibilities. These trends indicate that work-home conflict will remain an important and sustained phenomenon in the decades to come in Hungary.

1.2.3 Increasing participation of women in the workforce

Women's workforce participation in Hungary has undergone dramatic changes in the last 25 years. Traditionally, employees have been males with homemaker wives to see

to the needs of the family. Today's workforce, however, is a mosaic of different genders, ages and lifestyles. According to recent data, the employment rate of women in Hungary in the age cohort of 25-54, the most active age range from an economic point of view, is comparable to that of the European Union average of ca. 68%. However, the employment rate of women in all other age cohorts in Hungary is still lower than that in the normative age cohorts of women in the European Union (Koncz, 2006). The current, largely similar employment rates of women in the European Union and in Hungary are a result of two distinct processes in the workforce. While employment of women in Hungary sharply declined from more than 80% in the 70s and 80s to the current figures mentioned above, employment of women in Western European countries steadily increased over the past decades.

The high number of female employees until the late 80s in Hungary can be explained by various socio-economic and political processes including (1) the acute need for women in the workforce after World War II to rebuild the country, (2) acceleration of industrialization and subsequent need for workforce, (3) ideological objectives to weaken the significance of the family as an institution and simultaneously increase the importance of 'state' in the education of children as well as to facilitate the development of a new social value system, namely the added social value of 'working women' compared to that of 'mothers/housewives only'. It is important to note, however, that these attempts have largely failed as the Hungarian society has not only maintained but also strengthened its values regarding the centrality of family over the last 50 years (cf. section 1.2.1) (Pongrácz, 2006).

Between 2000 and 2004, the employment rate of women aged between 15 and 64 years increased in the European Union by 2.1%. Similarly, female employment also increased in Hungary, although only by 1% in the same period (Pongrácz, 2006). Despite the slight increase in the employment of women of working age in Hungary in recent years, employment rates from 2000 until 2004 vary significantly in certain age cohorts. For example, female employment in the youngest age group (15-24 years) declined from 29.7% in 2000 to 20.8% in 2004 as a result of more women staying longer in education and also due to a worsening of the group's employment prospects. At the same time, the

employment rate of older women aged 55–64 years grew substantially from 13.3% in 2000 to 25% in 2004 because of the increase in the official retirement age (Koncz, 2006).

It is important to note that significant differences exist in the educational level between employed men and women. Whilst the largest group of female employees have completed at least 12 years of training, the largest group of male employees completed only 10 years of training. This compares favourably with data regarding the highest educational level of working men and women in the 80s, when the prevalence of the 8-year training was the highest among both female and male employees. Data also show that the number of women employees with university or post-graduate degree grows much faster than that of male employees. Furthermore, currently there are more female employees with a university degree than men (20% vs. 15%, respectively). This is also reflected in the higher number of female managers. Women increased their share as enterprise or organization managers from 16% to 25% between 1980 and 1990 (Central Statistical Office, 2001; International Labour Office, 1997).

With more women embarking on higher education, their number in medicine has also increased steadily in the past few decades (from 30% in 1970 to 51% in 2002). Physicians are more likely to experience difficulties in balancing work and home life as a result of high physical and emotional demands (Geurts, Rutte, & Peeters, 1999). Female physicians in Hungary may be particularly affected by work-home interference due to their growing participation in the medical profession, the typically long working hours, and the traditional nature of the society where the family continues to be an important institution and women are expected to prioritize their family roles (Poelmans, 2001).

1.2.4 Increasing demands at work to improve productivity

Competitive pressures to increase productivity and more stringent regulatory and legal environment including higher standards related to employees' rights and to equity at

work have driven companies to change their working practices and the way they manage their employees. Many organizations have responded to these pressures by streamlining their operating structures, which translated into workforce reductions and subsequently into increased demands to improve efficiency from the remaining workforce.

The Hungarian health care system has been undergoing significant restructuring (Csonka, 2004). Loss of job security, chronic shortage of resources and constant pressures from health care managers, purchasers, providers and patients to increase the efficiency and profitability of health care services have resulted in a sharp increase in workload, declining autonomy and diminishing status for the vast majority of physicians. These changes may adversely affect physicians' well-being as loss of job security and the control over one's job, high workload, and a lack of adequate resources have been identified as significant predictors of stress and may contribute to the development of stress-related diseases including burnout, anxiety and depression (Rizzo, House, & Lirtzman, 1970; Ramirez, Graham, Richards, Cull, & Gregory, 1996; McMurray, Linzer, Konrad, Douglas, Shugerman, & Nelson, 2000; Burke & Greenglass, 2001). This combined with growing level of family and financial pressures from the home domain may result in higher levels of work-home conflicts and consequent stress that may predispose physicians to stress-related psychological and somatic morbidities.

1.2.5 Inadequate organizational response

Organizational response to address the negative effects of the conflict between the work and home domains such as decreased health, absenteeism, loss of productivity has been rather slow. Family-friendly work arrangements, such as flexible time or part-time work, to help employees achieve a better balance between work and home life are a rarity in Hungary. Similarly, appropriate policies for the female physician to help integrate her professional and domestic domains and thus to reduce role conflict are scarce. However, health care establishments have been rather reluctant to institute these options due to increased costs, lack of financial resources, the possibility of compromised patient care

or the potential to provoke senior (male) management and full time (male) colleagues. Inapt organizational response may therefore have the potential to exacerbate the conflict at the work-home interface perceived by many women and especially by female physicians.

1.3 Conflict at the work-home interface: work-family conflict

Women including physicians are expected to perform both the female (mother and/or spouse) and the professional roles. The functionalist approach, which is largely borrowed from anthropology, defines a 'role' as a set of expectations about behaviour for a position in a social structure. Expectations define behavioural requirements ascribed to the role by the individual filling that position or by others who relate to that role. Different roles give rise to certain sets of role expectations and simultaneous occurrence of two or more sets of role expectations may necessitate responses and tasks that may be competing or antagonistic so that compliance with one would make compliance with the other more difficult, the concept called role conflict. For example, role conflict may result from a discord between the individual's internal standards and the defined role behaviour, or between the time, resources and capabilities of the individual and the defined role behaviour (intra-role conflict or role ambiguity). Interrole conflict is a specific type of role conflict that arises from different or incompatible role behaviours or requirements between several roles for the same individual (Rizzo, *et al.*, 1970). Work-family conflict is a form of interrole conflict in which the behavioural requirements associated with the role performed in the work and family domains are mutually incompatible (Greenhaus & Beutell, 1985). Work-family conflict is a form of role conflict in which the behavioural requirements associated with the role performed in the work and family domains are mutually incompatible. Consistent with this definition, three forms of work-family conflict have been identified (Greenhaus & Beutell, 1985):

1. time-based conflict may occur when time dedicated to one role makes it difficult to fulfil another role;

2. strain-based conflict may occur when strain experienced in one role interferes with participation in another role;
3. behaviour-based conflict occurs when specific behaviours required in one role are incompatible with behavioural requirements in another role. More recently, Greenhaus, Allen, and Spector (2006) differentiated energy-based and strain-based conflict; the former reflects physical or emotional exhaustion, and the latter reflects the transfer of negative emotions or feeling states (e.g., feeling stressed or cranky).

Research suggests that conflict between work and family is reciprocal (bidirectional) in that work can interfere with family (work-to-family conflict) and family can interfere with work (family-to-work conflict) (Frone, Russel, & Cooper, 1992a; Allen, Herst, Bruck, & Sutton, 2000).

Data published almost 30 years ago indicate that 58% of female physicians reported work-family conflicts (Nadelson, Notman, & Lowenstein, 1979). In a more recent study by Warde, Moonesinghe, Allen, and Gelberg (1999), 87% of female physicians were found to experience moderate to high levels of interrole conflict between the work and home domains compared to 62% of male physicians.

1.4 Work-family conflict and stress: the theory of roles and the stress response

Research of interrole conflict between the work and family domains is characterized by a paucity of theory. The field has been dominated by the role theory developed by Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964). Although this theory does not address the actual behaviours and interactions among the actors involved in the event of interrole conflict (e.g., interactions between husband and wife or employee and supervisor), it

offers a good theoretical framework for examining the sources and the potential outcomes of work-family conflict and their relations. Empirical studies have generated evidence for the applicability of this theory.

According to role theory, conflicting expectations associated with different roles have detrimental effects on well-being. Role theory predicts that multiple roles lead to role conflict, which in turn results in strain. A fundamental aspect of this theory is the scarcity model of roles (Goode, 1960). This model suggests that the resources (i.e. time, energy) of the individual is limited and that multiple roles inevitably reduce the resources available to meet all role demands, thus leading to interrole conflict, which functions as a stressor and subsequently causes strain (Rizzo, *et al.*, 1970).

This rationale is in line with the basic concept of stress theories, which propose a causal link between stressors and strain (Karasek & Theorell, 1990). Interrole conflict has been identified as a key component of the stress response (Kompier & Levi, 1995). First described by Cannon (1929), the stress response has been the topic of extensive theoretical and empirical research over the years (for a review, see Quick, Nelson, & Hurrell, 1997). A large body of literature is available to help understand the mechanisms by which stress can manifest itself in ill health.

Scientifically, 'stress' refers to the broad domain concerned with how individuals adjust to their environments (Quick, *et al.*, 1997). There are three major components of stress: the stressors, stress response, and distress (i.e., outcome of stress response). Following are some definitions given by Quick, *et al.* (1997):

Stressor: The stressor is the physical or psychological stimulus which generates the stress response. It serves as the trigger for the mind-body activities described above.

Stress response: The stress response is the generalized, unconscious mobilization of the body's natural energy resources when confronted with a stressor. It is characterized by a biological activation of the hormonal and sympathetic nervous systems (the hypothalamus-pituitary-adrenal gland axis), which results in the release of stress

hormones, the most abundant being adrenaline and cortisol. Adrenaline increases heart rate, elevates blood pressure and boosts energy supplies. Cortisol, the primary stress hormone, increases glucose in the bloodstream, enhances the brain's use of glucose and increases the availability of substances that repair tissues. Cortisol also suppresses functions that would be nonessential or detrimental in a 'fight or flight' situation. It alters immune system responses and suppresses the digestive system, the reproductive system and growth processes (cf. section 1.4.2.2). The complex alarm system also communicates with regions of the brain that control mood, motivation and fear. All of these actions are designed to prepare the individual to fight or run, hence the description of the stress response as the 'fight or flight' response.

Distress: Distress (also referred to as 'strain') is the adverse outcome of the stress response. It refers to the individual's degree of physiological, psychological and behavioural deviation from normal healthy functioning.

'Distress', therefore, is what we generally mean when we talk about experiencing a high level of 'stress'. It is important to note that not all stress responses are unhealthy. 'Healthy' stress responses (labelled 'eustress'; Selye, 1976) refer to the moderate level of arousal that is required to increase performance. Stress in its evolutionary context of 'fight or flight' is one of humans' best assets for managing legitimate emergencies and achieving peak performance in vital tasks and activities (Quick, *et al.*, 1997). It is only when the stress response exceeds this optimum level that the load becomes too great and performance is decreased. Recognition that the stress response can be either adaptive or maladaptive leads us to appreciate that "stress is inevitable; distress is not" (Quick, *et al.*, 1997).

Physical threats are not the only events that trigger the stress response. Psychological 'threats' such as the stress associated with work, interpersonal relationships, major life changes, illness or the death of a loved one, can trigger stress response. Also, many of our modern stressful circumstances, unlike most physical threats, tend to be prolonged. Consequently, individuals may experience the 'fight or flight' reaction longer than it is intended to operate. Hence, the stress response is best understood through an integrated

approach which examines the whole spectrum of psychological, sociological, and physiological events that make demands on an individual (Cooper & Davidson, 1987). Figure 1 provides a model of the stressor-strain relationship with the various domains that constitute possible sources of stress (stressors) and subsequent stress outcomes (strain).

According to the model, psychosocial stressors originate from both the work and home domains as well as from individual characteristics. These processes take place in a combined ecological system where humans continuously interact with the environment (Levi & Lunde-Jensen, 1996), which allows for multiple feedback mechanisms and responses. Accordingly, distress which has occurred in an individual can impact on the stressors (e.g., in the work or home domains or interrole conflict) and affect the individual's next stress response.

In the next sections of this thesis, the stress-response model is explored in greater detail and the antecedents (stressors) and outcomes of stress (distress or strain) are discussed with particular emphasis on work-family conflict.

1.4.1 Antecedents to stress

The stress model shown in Figure 1 identified four broad categories of stressors in a worker's environment: those associated with the work domain, the home domain, stressors on the interface of work-home (interrole or work-family conflict), and socio-demographic characteristics.

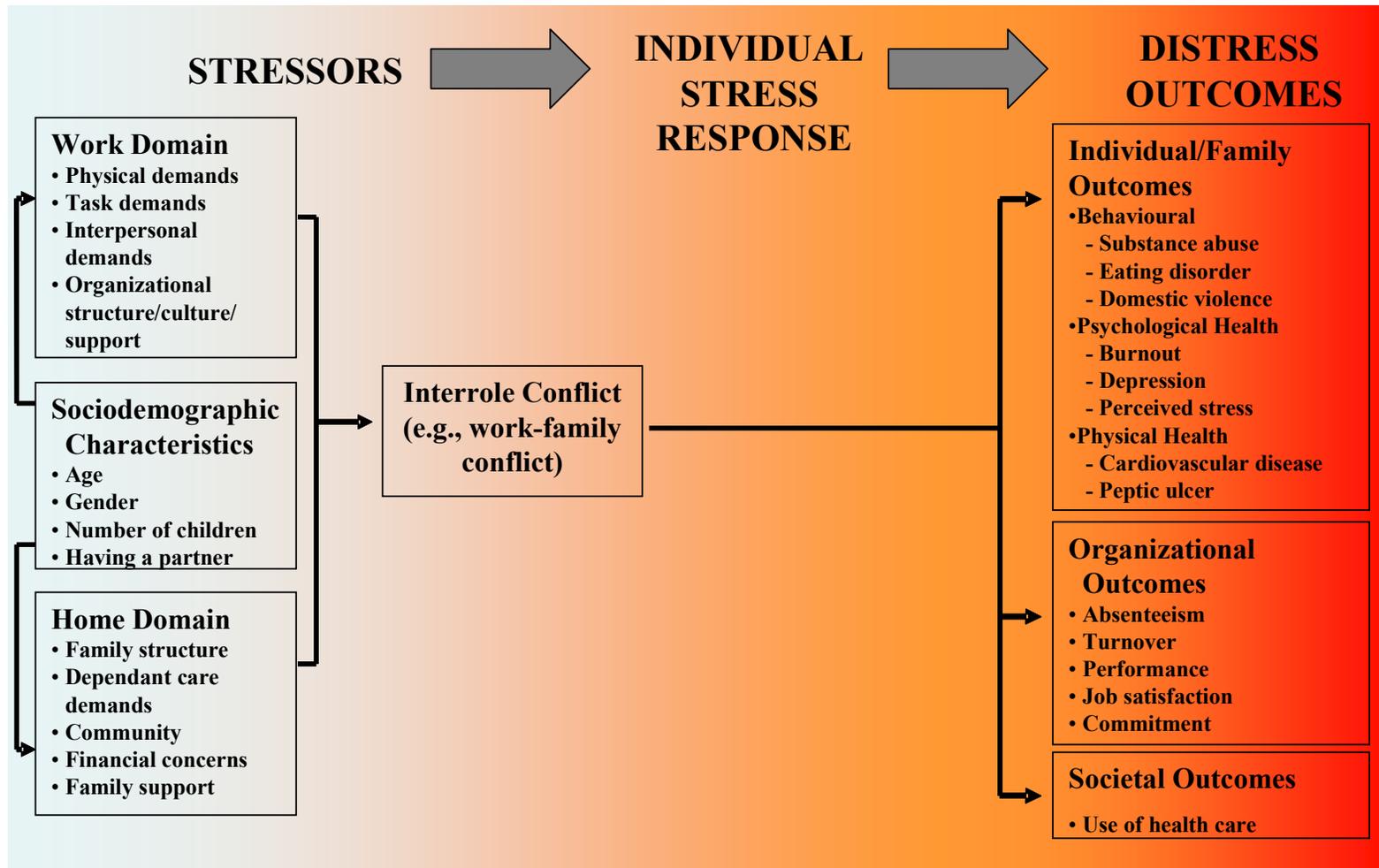


Figure 1: The integrated stress model of work-family conflict.

1.4.1.1 Work stressors

Prior studies have examined a variety of antecedents to work-family conflict. Some of the more common sources of stress in the workplace may include (1) physical stressors (e.g., lifting heavy weights, and exposure to potentially hazardous conditions or substances, computer work, noise, inadequate lighting), (2) task demands (e.g., too high quantitative workload, having a full-time job, insufficient time), (3) emotional demands (e.g., personality differences, team pressures, differences in leadership styles, high expectations, energy required for coping), and (4) stressors associated with the organizational structure and culture (e.g., lack of clear job descriptions or chain of command, lack of decision latitude (i.e., sufficient authority or seniority to make decisions), lack of skill discretion (i.e., sufficient training and practice to give a sense of mastery), lack of organizational instrumental (e.g., effective infrastructure) and emotional (e.g., relationships) support), and (5) insufficient rewards (e.g., work satisfaction, remuneration, recognition, esteem, status) (Quick, *et al.*, 1997).

Stress at work, i.e., job strain, can therefore develop if, for instance, there is an imbalance among job demands, job control, and support in the workplace. In this model developed by Karasek and Theorell (1990), job strain results from the simultaneous occurrence of high demands and low control, and/or low support. According to another concept developed by Siegrist (1996), job strain can also develop upon imbalance between efforts and rewards, for example, when rewards are inadequate to compensate for the efforts invested (the so called ‘high cost/low gain’ conditions). In Siegrist’s (1996) job strain model, two components of efforts and rewards are distinguished: an extrinsic component referring to distinct job conditions (effort: demands, obligations; rewards: money, esteem, career opportunities, and security), and an intrinsic component (a personal coping style termed ‘overcommitment’). ‘Overcommitment’ is defined as a set of attitudes, behaviours, and emotions reflecting excessive striving in combination with a strong desire of being approved and esteemed. People characterized by ‘overcommitment’ are exaggerating their

efforts beyond levels usually considered appropriate. Although the two models show some similarities, that is they both have the demand component, they clearly differ in two regards: (1) Karasek and Theorell's (1990) demand-control-support model of job strain is restricted to the situational aspects of the psychosocial work environment whereas Siegrist's (1996) effort-reward imbalance model of job strain includes both extrinsic (situational) and intrinsic (personal) characteristics. (2) The effort-reward imbalance model also focuses on a number of unique reward aspects of the job, for example salaries, promotion prospects and job stability, hence this model also provides insight into job stress associated with broader labour market conditions (Peter, Siegrist, Hallqvist, Reuterwall, Theorell, & the SHEEP Study Group, 2002).

1.4.1.2 Home stressors

Home stressors may include (1) family structure and the quality of family relationships such as divorce, separation, death, illness of a family member, or a move to a new house or community (McCubbin, Joy, Cauble, Comeau, Patterson, & Needle, 1980), (2) dependant care demands such as large numbers of children and elderly people in the family requiring care (Greenhaus & Beutell, 1985; Frone, Russell, & Cooper, 1992b; Kinnunen & Mauno, 1998), (3) the nature of the community in which one lives such as cleanliness, safety, transportation, and road conditions (Matteson & Ivancevich, 1987), (4) financial concerns (Lazarus & Folkman, 1984), and lack of family support (Adams, King, & King, 1996).

1.4.1.3 Socio-demographic stressors

Another set of antecedents to work-family conflict are basic socio-demographic variables including age, having a partner or having children (Greenhaus & Beutell, 1985; Nock & Kingston, 1988; Frone, *et al.*, 1992b; Kinnunen & Mauno, 1998), and gender. Research on the role of gender in the stress response suggests that women experience higher levels of

work-family conflict and consequent distress than men (Duxbury & Higgins, 1991; Gutek, Searle, & Kelpa, 1991; Higgins, Duxbury, & Lee, 1996).

1.4.1.4 Work-family conflict as a stressor

A growing body of evidence suggests that antecedents in the work and family domains may or may not be highly stressful when considered alone, but their joint occurrence is sufficient to produce distress (Bedeian, Burke, & Moffett, 1988), suggesting an additive effect (Frone, *et al.*, 1992b). Multidirectional relationships have also been identified between the two domains (Matteson & Ivancevich, 1987), i.e., work can interfere with family (work-to-family conflict) and family can interfere with work (family-to-work conflict). This approach is especially important in the study of work-family conflict as it highlights the interdependence and multidirectionality of the various contributors to stress in an individual's life.

In line with role theory, work-family conflict serves as an interface between work and home domains, and it can be viewed as a specific type of stressor triggered by the combined effects of antecedents from these two domains. Recent research has suggested that work-family conflict may also serve as a mediator/moderator between stressors and outcomes in the stress response (Higgins, Duxbury, & Irving, 1992; Frone, Barnes, & Farrell, 1994), which highlights the multitude of relations among the variables within this model. Therefore, it has been suggested that work-family conflict should be considered as a separate construct within the stress response (Frone, *et al.*, 1992a).

Taking into account the 2 directions (family-to-work and work-to-family conflict) and 3 forms (time/strain/behaviour-based conflict) of work-family conflict as well as the reciprocal relationships between stressors and strain described in sections 1.3 and 1.4.1.1, it is easy to conceptualize how, for example, strain experienced at work can interfere with the realization of the family role and hence lead to work family conflict.

1.4.2 Potential outcomes of the stress response

1.4.2.1 Organizational and societal outcomes of the stress response

As illustrated in Figure 1, individual distress can have unfavourable consequences at the organizational level, ranging from increased absenteeism and turnover due to illness and the inability to manage work-related stress to decrements in job satisfaction, commitment and productivity (Sullivan & Bhagat, 1992; Quick, *et al.*, 1997). In addition, distress may manifest itself on the societal level as increased use of healthcare services (Levi & Lund-Jensen, 1996; for a review on potential consequences of job strain in the Hungarian context, see Jakab, Hulesch, & Lázár, (2006).

Of the organizational outcomes listed above, physicians' job satisfaction is of particular importance in the health care setting because it may impact several important aspects of care, such as the continuity of care and health care costs, both of which have been topical issues in recent years in Hungary. As discussed in section 1.2.4, physicians have been experiencing a number of unfavourable changes in the work place, which resulted in increased administrative burden and loss of autonomy. These factors impact negatively on physicians' job satisfaction. Understanding the antecedents to job satisfaction among physicians is important for both physicians and the general public, because physician satisfaction is associated not only with physicians' health and well-being, but also with patient adherence to medications, patient satisfaction, physician turnover, and the morale of health care workers, which ultimately influence the quality of patient care in general (Bovier & Perneger, 2003).

1.4.2.2 Individual outcomes of the stress response: adverse impact on psychological and somatic health

Distress can cause a variety of adverse reactions at the level of the individual employee or family including (1) behavioural reactions such as changes in eating, smoking, or drinking behaviours, and domestic violence, (2) physical ill-health such as cardiovascular diseases, gastrointestinal diseases (Quick *et al.*, 1997; Jakab & Lázár, 2007), and gynaecological disorders (László, Györffy, Ádám, Csoboth, & Kopp, 2008), and (3) psychological or psychiatric disorders such as perceived stress (Rizzo, *et al.*, 1970; Frone, *et al.*, 1992b; van Hooff, Geurts, Taris, Kompier, Dikkers, Houtman, & van den Heuvel, 2005), anxiety, depression or burnout (Frone, *et al.*, 1992b; Higgins *et al.*, 1992; Frone, *et al.*, 1997; Thomas & Ganster, 1995). Table 1 below summarizes the most prevalent symptoms and diseases associated with stress.

Long-term activation of the stress-response system and the subsequent overexposure to cortisol and other stress hormones can disrupt almost all processes in the body. The impact of stress on some of the organ systems is described below.

1.4.2.2.1 Gastrointestinal system

Stress commonly causes stomach-ache or diarrhoea. This is due to the inhibitory effect of the stress hormones (e.g., noradrenalin and cortisol) on the release of gastric acid and the motility (emptying) of the stomach. The same hormones also stimulate the colon, which speeds the passage of its contents. Chronic hormone-induced changes can enhance appetite and increase the risk of weight gain (Quick *et al.*, 1997; McEwen, 1998; Blechert, Michael, Grossman, Lajtman, & Wilhelm, 2007; Gareau, Silva, & Perdue, 2008).

Table 1: Somatic, psychological, and behavioural symptoms of distress.

Somatic symptoms/diseases	Psychological symptoms/diseases	Behavioural symptoms/diseases
Headache	Anxiety	Over-eating
Chest pain	Restlessness	Under-eating
Palpitations	Worrying	Angry outbursts
High blood pressure	Irritability	Drug abuse
Shortness of breath	Depression	Excessive drinking
Muscle aches	Sadness	Increased smoking
Back pain	Anger	Social withdrawal
Clenched jaws	Mood swings	Crying spells
Tooth grinding	Job dissatisfaction	Relationship conflicts
Stomach upset	Feeling insecure	Decreased productivity
Constipation	Confusion	Blaming others
Diarrhoea	Burnout	
Increased sweating	Forgetfulness	
Tiredness	Resentment	
Sleep problems	Guilt	
Weight gain or loss	Inability to concentrate	
Sexual problems	Seeing only the negatives	
Skin breakouts		

1.4.2.2.2 Immune system

Many studies have shown that stress can suppress the immune system, but other studies have shown boosts in the immune system under stress. Short-term stressors have been shown to boost the immune system. The ‘fight or flight’ response prompts the immune

system to prepare itself for infections resulting from acute challenges to the integrity of the body. Chronic, long-term stress has been shown to suppress the immune system. Indeed, cortisol is one factor that prompts the immune system to reprioritize its tasks in case of chronic stress. Upon chronic stress, stress hormones may switch off disease-fighting white blood cells, which leads to increased susceptibility to infections. Other features of the immune system may be permitted to run uncontrolled, which increases the risk of the development or exacerbation of autoimmune diseases (Quick *et al.*, 1997; McEwen, 1998; Gareau, *et al.*, 2008).

1.4.2.2.3 Nervous system

Some evidence suggests that repeated release of stress hormones produces hyperactivity in the hypothalamus-pituitary-adrenal axis and disrupts the normal level of serotonin, the hormone that is critical to the feeling of well-being. In case of chronic stimulation of the stress response, stress hormones may contribute to persistent and severe depression, as well as feelings of anxiety. Such stress-induced depression often results in sleep disturbances, loss of sex drive and loss of appetite. It may also increase the susceptibility to developing certain personality or behavioural disorders. Studies also suggest that chronic activation of stress hormones may alter the operation and structure of neurons that are critical for memory formation and function (Quick *et al.*, 1997; McEwen, 1998).

1.4.2.2.4 Cardiovascular system

The effects of chronic stress can create significant damage to the cardiovascular system by increasing the risk of coronary artery disease, elevating blood pressure, increasing atherosclerosis, increasing the risk of myocardial infarction, increasing the risk of diabetes, and increasing the likelihood of obesity (Quick *et al.*, 1997; McEwen, 1998; Kivimäki,

Hintsanen, Keltikangas-Järvinen, Elovainio, Pulkki-Råback, Vahtera, Viikari, & Raitakari, (2007).

1.4.2.2.5 Reproductive system

Stress suppresses the reproductive system at various levels (Quick *et al.*, 1997; McEwen, 1998). Stress hormones prevent the release of gonadotropin releasing hormone (GnRH), the critical hormone that signals a cascade of hormones that direct reproduction and sexual behaviour. Similarly, cortisol and related glucocorticoid hormones not only inhibit the release of GnRH, but also the release of luteinizing hormone, which prompts ovulation and sperm release. Glucocorticoids also inhibit the testes and ovaries directly, hindering production of the male and female sex hormones testosterone, oestrogen, and progesterone (Nakamura, Sheps, & Arck, 2008).

1.4.2.2.6 Other systems

Stress worsens many skin conditions such as psoriasis, eczema, hives and acne and has been shown to trigger asthma attacks (Quick *et al.*, 1997; McEwen, 1998; Blechert, *et al.*, 2007).

1.5 The well-being of physicians: associations with stress

In medicine, health or well-being is defined as the absence of disease (St Claire, Watkins, & Billingham, 1996). Physicians tend to utilize this disease model when assessing their personal well-being and define well-being as the absence of burnout or distress (Weiner, Swain, Wolf, & Gottlieb, 2001; Yamey & Wilkes, 2001). However, well-being goes beyond merely the absence of distress. Research shows that physicians' promotion of their

well being includes five general strategies such as, (1) developing meaningful relationships with family and colleagues, (2) enhancing personal attentiveness to the spiritual or religious aspects of self, (3) appropriate work attitudes (e.g., finding meaning in or being satisfied by one's work, actively choosing the type of medical practice that suits one, (4) deploying self-care practices (e.g., cultivating personal interests and self-awareness in addition to professional and family responsibilities, seeking professional help for personal somatic or psychiatric illness as needed, and (5) developing a philosophic approach to life that incorporates a positive outlook, identifying and acting on values, and stressing balance between personal and professional life (Weiner, *et al.*, 2001).

Using the definition of well-being mentioned above, a substantial body of empirical research has established a link between stress (as the antecedent to distress) and health or the lack thereof in men and women. Research on physician distress began in the 80s. Since then, it has been identified that physician distress manifests itself primarily in burnout, depression, anxiety, substance abuse, divorce, broken relationships, and disillusionment (Shanafelt, Sloan, & Habermann, 2003). There is strong evidence that depression and alcoholism is more prevalent among physicians than among other segments of the working population. In addition, evidence shows that symptoms of general psychological distress such as sleep disturbance, tiredness, muscle aches, are also elevated among physicians (Firth-Cozens, 2001). Research suggests that there are gender differences in terms of perceived distress among physicians. For example, a study by Jenkins, Lewis, Bebbington, Brugha, Farrell, Gill, *et al.* (1997) showed that women report higher levels of anxiety and depression compared to men. These gender differences in perceived distress among physicians have been attributed to differences in roles and in the level of strain physicians experience (Nazroo, Edwards, & Brown, 1998).

The following sections introduce some of the most prevalent forms of physician distress explored in this research in detail.

1.5.1 Psychological morbidity including burnout

In Hungary, recent changes in the society (described in section 1.2.4) as well as the current state of healthcare may enhance the level of distress experienced by physicians and may contribute to the development of stress-related psychological diseases including anxiety and burnout. Physician burnout is of particular concern in the medical as well as public health settings in Hungary. Potential negative consequences of burnout may include depression, substance abuse, absenteeism and sick-leave; hence it may not only adversely affect physicians' well-being but also the quality of patient care (Firth-Cozens & Greenhalgh, 1997; Shanafelt, Bradley, Wipf, & Back, 2002).

The term 'burnout' was originally conceptualized by Freudenberger (1974) who defined it as "to fail, wear out, or become exhausted by making excessive demands on energy, strength or resources". Current research focuses on the burnout model developed by Maslach, Jackson, and Leiter (1996), in which burnout was defined as "a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur among individuals who work with people work of some capacity".

Emotional exhaustion refers to feelings of being overextended and exhausted by the emotional demands of one's work. It manifests itself in a feeling that one has nothing left to give to others. Emotional exhaustion closely resembles traditional stress reactions, such as fatigue, job-related depression, psychosomatic complaints, and anxiety (Schaufeli & Enzmann, 1998). Depersonalization may be characterized by a detached, mentally distanced, and cynical response to the recipients of one's service or care, treating them as objects. Finally, reduced personal accomplishment is characterized by feelings of inadequacy, reduced professional efficacy, and lessened personal competence. Emotional exhaustion and depersonalization are generally considered to be the core dimensions of burnout. These two dimensions are strongly correlated with each other (Lee & Ashforth, 1996). Personal accomplishment is the weakest burnout dimension in terms of significant relationships with other variables (Schaufeli & Enzmann, 1998).

Distress is often confused with burnout. Distress generally involves too much: too many pressures that demand too much of the person physically and psychologically. Distressed people can still imagine, though, that if they can get everything under control, they will feel better. Burnout, on the other hand, is about not enough. Having burnout means feeling empty and devoid of motivation. People experiencing burnout often do not see any hope of positive change in their situations. Similarly, it is important to distinguish burnout from depression. Generally, burnout is context related, most commonly work related, whereas depression is 'context free', pervasive, intruding all aspects of one's life.

There is a growing body of evidence that female physicians experience a higher degree of stress at work and consequent burnout compared to men due to some sources of stress that are unique to or more prevalent amongst female doctors including discrimination at the workplace and lack of support (Gross, 1992; McMurray, *et al.*, 2000; Stewart, Ahmad, Cheung, Bergman, & Dell, 2000; Robinson, 2003).

1.5.1.1 Major symptoms of burnout

Burnout may manifest itself in various psychological, somatic, cognitive, and behavioural symptoms. Some of the psychological symptoms may include hopelessness, emotional exhaustion, detachment, isolation, frustration, despair, cynicism, apathy, irritability, and anxiety. The most frequent somatic symptoms could be fatigue, sleep disturbance, headache, vertigo, muscle pain, diarrhoea, constipation, impaired immune system, palpitation, and hypertension. Some of the cognitive symptoms include concentration disorders, inability to make decisions, and self-doubt. Burnout may also manifest itself in motivational symptoms such as loss of motivation, loss of enthusiasm and idealism, feeling of disappointment, resignation, feeling bored and demoralized. Behavioural symptoms may include

hyperactivity, impulsivity, being hesitant, alcohol, nicotine or drug abuse, risk-taking behaviour, and cessation of recreational activities.

1.5.1.2 The development of burnout

In the development of burnout, chronic exposures to stress may result in emotional exhaustion heralded by lack of mental strength to invest in work, chronic tiredness, and fatigue. This may be followed by isolation of affect through resignation and cynicism, (depersonalization dimension) in an attempt to avoid stress, and by decreased performance and loss of social contacts (personal accomplishment dimension).

1.5.1.2.1 Somatic morbidity

Physicians' physical health has recently become a focus of empirical research (Firth-Cozens, 2003). Most prior studies have concentrated on physicians' mental health and found high prevalence of significant psychological illnesses including depression, suicidal ideation, substance abuse, stress, and stress related illnesses among physicians (Shanafelt, *et al.*, 2003). There is, however, a paucity of information on physicians' physical health. For example, one study by Töyry, Räsänen, Kujala, Äärimaa, Juntunen, Kalimo, *et al.* (2000) showed that physicians, especially men, reported many common chronic illnesses including allergic dermatological and pulmonary diseases as well as diseases of the gastrointestinal tract as often as or even more often than the normative population. A further study by Davidson and Schattner (2003) found that 44% of physicians suffered from chronic diseases. In another study among general practitioners in the United Kingdom, the prevalence of serious illnesses was found to be around 50% (Chambers, 1992).

The development of physical morbidity has been associated with adverse psychosocial environment including work strain (Quick *et al.*, 1997). In particular, it has been

hypothesized that low control (demand-control-support model of job strain) and low reward (effort-reward-imbalance model of job strain) often occur simultaneously in the same work environments, and the combined impact of these adverse factors would critically increase the risk of somatic (as well as psychological) morbidity (Peter, *et al.*, 2002).

As discussed in section 1.2.4, today's female and male physicians in Hungary face a variety of stresses arising from increasing government regulations, malpractice suits, increased demands at the workplace, less time with patients, keeping pace with the exponentially growing medical knowledge base, and from the difficulties of balancing their personal and professional lives (cf. section 1.2.4). Female physicians in the traditional Hungarian society may be exposed to especially high levels of stress due to their dual roles, at minimum, as 'breadwinners' and 'homemakers'. Although many physicians acknowledge the existence of these stresses, it is difficult to understand their effect on the physicians' health fully. Hence, it is important to understand the prevalence, causes, and consequences of physician distress; the factors that contribute to physician well-being; and the steps that organizations and/or physicians can or should take to promote physician well-being. The research presented herein attempts to explore these issues in detail.

CHAPTER TWO

AIMS AND HYPOTHESES

2.1 The psycho-social characteristics of work-family conflict experienced by female physicians

Multiple role expectations imposed upon women and the increasing participation of women in the medical profession in general and in Hungary in particular render work-family conflict inevitable; however there is limited information on the prevalence and antecedents of work-family conflict in this professional group of women. Furthermore, most of the empirical research on work-family conflict is based upon data from North America and the United Kingdom and there is a paucity of information on work-family conflict experienced by female physicians from other more traditional cultures, like the Hungarian, where the family continues to be an important institution, hence exerting extra pressures on women to harmonize the work and home domains. Taking these into account, there is a strong rationale for the research of work-family conflict in this unique setting, as such information may prove to be useful to female students in selecting their career and to health services administrators in planning resources and managing workforce productivity. Therefore, the primary aim of this research was to explore the prevalence, direction, and type of work-family conflict among female physicians in Hungary.

2.2 Potential antecedents to work-family conflict experienced by female physicians

An important objective of occupational stress research is to understand factors that are associated with and/or are antecedents to work-family conflict. Although knowledge about work, home, and socio-demographic stressors is substantial (please see section 1.4.1 above), more empirical research is needed to define further stressors. There is a growing body of evidence that social support from work and non-work-related sources may play an important role in the occupational stress process and may influence the level of perceived work-family conflict (Adams, *et al.*, 1996). However, there has been limited research on the

relationship between work-family conflict and emotional or instrumental work/non-work support in general and among physicians in particular. Research by Burke (1988) demonstrated that a lack of support in the non-work environment was related to work-family conflict in a sample of police officers. A study by Jansen, Kant, Kristensen, and Nijhuis (2003) revealed that co-worker and supervisor support among men and domestic support among women protected against work-family conflict. In a sample of health care providers, Thomas and Ganster (1995) showed that emotional and/or instrumental support at work from peers and supervisors helped reduce work-family conflict. In a study among nurses, Gottlieb, Kelloway, and Martin-Matthews (1996) identified lack of social support as a predictor of work-family conflict. Studies among physician mothers in North America revealed that spousal support with childcare and domestic duties is a significant variable in attenuating work-family conflict (Sobecks, Justice, Hinze, Chirayath, Lasek, Chren, Aucott, Juknialis, Fortinsky, Youngner, & Landefeld, 1999; McMurray, *et al.*, 2000). In the Hungarian general population, Jakab and Lázár (2007) have identified significant predictive relationships between support in the workplace and adverse distress outcomes.

However, there has been no empirical research on the provision and relations of social support including parental, spousal, peer, and organizational support (or the lack thereof) to work-family conflict experienced by female physicians in a traditional, family-centred cultural setting, where maternal role expectations are demanding. Hence, a further aim of this research was to investigate the prevalence and psychosocial characteristics of parental, spousal, peer, and organizational support and their relations to work-family conflict among female physicians.

2.3 Potential consequences of perceived work-family conflict among female physicians

Conflict between the work and home domains has broad ramifications. Discrepancy between the home (female) and work (professional) role requirements may result in work-

family conflict that may impinge upon role performance. Therefore, either the female or the professional role may limit full realisation of the other. In addition, work-family conflict may lead to distress, functional impairment both in the work and home domains and subsequent job dissatisfaction (Sullivan & Bhagat, 1992), high prevalence of psychiatric morbidities including burnout, anxiety, and depression, somatic complaints, elevated blood pressure, and chemical dependence (see Allen, *et al.*, 2000, for a systematic review). Indeed, several investigations have found high levels of distress among female physicians due to difficulties in combining multiple roles and increasing role discord (Sobecks, *et al.*, 1999; McMurray, *et al.*, 2000).

Despite the high likelihood of work-family conflict as a source of distress among female physicians, its relations to organizational and individual distress outcomes such as job satisfaction, burnout, other psychiatric/psychological diseases and somatic complaints, which are major determinants of physician well-being, have not been fully explored. Furthermore, no published research is available about the prevalence and manifestation of distress and its antecedents among physicians in Hungary. Therefore, the final aim of this research was to assess the prevalence of organizational and individual distress outcomes (i.e., job satisfaction, somatic and psychological morbidity, in particular burnout), and to explore associations between these distress outcomes and perceived work-family conflict among female physicians the Hungarian context.

2.4 The conceptual framework and hypotheses of this research

According to the scarcity theory of roles described in section 1.4, the resources (i.e., time, energy) of the individual are limited and multiple roles inevitably reduce the resources available to meet all role demands, thus leading to role conflict, which subsequently may cause strain and may increase the prevalence of psychological and physical morbidities including burnout (Rizzo, *et al.*, 1970; Frone, *et al.*, 1992b; van Hooff, *et al.*, 2005). Using this theory as a conceptual framework, the following hypotheses were tested:

- H1. Female physicians experience significantly higher work-family conflict compared to their male counterparts.
- H2. Female physician report family-to-work rather than work-to-family conflict more frequently due to the more central role of the family in the society.
- H3. The lack of social (i.e., parental, peer, spousal, and organizational) support is more prevalent among female physicians compared to men.
- H4. Work-family conflict experienced by female physicians is associated with lack of social support.
- H5. More female than male physicians report stress-related somatic as well as psychological morbidity in particular burnout.
- H6. Job dissatisfaction is more prevalent among female physicians.
- H7. Work-family conflict is associated with psychological morbidity, in particular burnout, somatic complaints as well as with job dissatisfaction among female physicians.

CHAPTER THREE

SUBJECTS AND METHODS

3.1 Design

We used quantitative (questionnaires) and qualitative (interviews) techniques at two time points (Time 0 and Time 1) to explore the perceived level and psychosocial characteristics of work-family conflict and social support fully. There has been very little research on work-family conflict to date using a qualitative approach (Frone, *et al.*, 1992a). The following variables have been examined by means of questionnaires at Time 0: gender, age, domicile, marital status, number of children, maternity-related variables (i.e., career adjustment made for children), specialty destination, type of work (inpatient, outpatient services etc.), employment degree (full-time vs. part-time), work-family conflict, burnout, job demand, job control, job stress/strain, support in the workplace, average daily work hours, workload, job satisfaction, and the presence or absence of certain somatic and psychological diseases/symptoms. In addition, semi-structured face-to-face in-depth interviews were conducted at Time 0 to explore the direction and type of work-family conflict further (i.e., work-to-family and family-to-work conflict, time/strain/behaviour-based conflict) and to assess the prevalence and nature of social support (i.e., parental, spousal, peer, and organisational support). Further interviews were conducted at Time 1 (ca. 7 days later) about the work-home interface and the level of work-family conflict was reassessed in order to explore any changes in the reported intensity of work-family conflict among physicians who had reported some degree of work-family conflict at Time 0. This data collection approach with combined quantitative and qualitative techniques around a week apart allowed for more accurate and reliable assessment of the level of work-family conflict, the central variable of our study, and its sustainability over a period of time, which may lend important information as to the chronic nature of stress perceived by physicians. Participants were assured in writing that all data collected during the study were kept confidential. The study followed local guidelines for good ethical practice in social science research. Study methodology has been subject to appropriate ethical review.

3.2 Sample

Data for this research were collected and analysed between 2005 and 2007. Based on the number of physicians listed in the national register of healthcare professionals (i.e., the normative population of ca. 37,000 physicians), the tolerated margin of error (5%), the confidence level (95%), and an expected response rate of 70%, a sample size of 554 physicians was determined. Based on the distribution of the normative population in the strata of gender, age, specialty, and domicile, a quota sampling method was employed, and 289 female and 265 male physicians were selected for participation. Of the potential respondents, 219 female and 201 male physicians (a response rate of ca. 76% in both groups) agreed to participation.

Table 2 shows the demographic and occupational profile of the participants. Both samples were comparable on socio-demographic variables and work characteristics. The mean (SD) age was 48.7 (9.8) and 50.1 (11.1) years for females and males, respectively. Around 40% of physicians lived in the capital. Most of the participants (around 80%) were partnered with a median of 2 children. Around 50% of physicians worked in inpatient services and around 16% in outpatient services, general practice, and other establishments including those for research and medical training, as well as governmental and public health institutions, respectively. The participants were distributed among nine main medical specialties. Mean (SD) work hours a day among female and male physicians were 12.7 (3.2) and 12.8 (3.4), respectively. The two largest groups of respondents worked as general practitioners (ca. 22%) and internists (ca. 12%). Only 5 female physicians (2.4%) worked part-time (data not shown).

Due to the approximately 25% reduction in the intended sample size because of non-responders, we have performed a series of chi-square goodness-of-fit tests to assess the distributional adequacy of our sample (Snedecor & Cochran, 1989). This test compares the distribution of a sample in certain categories (e.g., age, gender, domicile, etc.) with that of the normative sample (i.e., the physicians listed in the national register of healthcare

professionals). The results of the goodness-of-fit tests confirmed that the distribution of our sample was comparable to that of the normative population in terms of gender, age, and domicile as well as two main specialties (i.e., internists and paediatricians) suggesting that our results might be applicable to all physicians in Hungary (Table 3). In addition, we have further assessed the accuracy of our results by confirming the margin of error based upon the number of respondents ($N=420$). According to this test, the error by 90%, 95%, and 99% confidence levels was 4%, 4.8%, and 6.2%, respectively, suggesting that our results may represent the normative population adequately.

Table 2: Socio-demographic and work characteristics of female and male physicians.

Variable	Female physicians	Male physicians
	<i>N (%)</i>	<i>N (%)</i>
Total sample	219 (100.0)	201 (100.0)
Domicile		
Capital	82 (37.4)	81 (40.3)
County town	67 (30.6)	65 (32.3)
Rural town	56 (25.6)	41 (20.4)
Village	14 (6.4)	14 (7.0)
Partnered		
Yes	174 (79.4)	156 (77.6)
No	45 (20.6)	45 (22.4)
Children		
No	38 (17.4)	25 (12.4)
Yes	181 (82.6)	176 (87.6)
1	48 (26.6)	39 (22.2)
2	96 (53.0)	88 (50.0)
3	28 (15.5)	34 (19.3)
≥4	9 (4.9)	15 (8.5)
Type of employment		
Inpatient services	106 (48.4)	88 (43.8)
Outpatient services	36 (16.4)	36 (17.9)
General practice	40 (18.3)	51 (25.4)
Other	37 (16.9)	26 (12.9)

Table 3: Comparison of socio-demographic characteristics between the normative population and the study sample.

Variable	Normative sample N	Normative sample %	Study sample %	Study sample N
Age (years)				
<30	2,688	7	5	22
30-39	8,392	23	25	103
40-49	9,773	26	28	117
50-59	9,039	24	26	111
>60	7,403	20	16	67
Region				
Capital	14,028	38	39	163
County town	10,816	29	31	132
Other town	7,086	25	23	97
Village	5,365	8	7	28
Gender				
Female	19,172	51	52	219
Male	18,123	49	48	201
Specialty				
Internist	3,752	11	12	50
Paediatrician	2,052	6	6	24
Total sample	37,295	100	100	420

3.3 Measuring instruments

3.3.1 Work-family conflict

Perceived work-family conflict was assessed by three well-established instruments developed for role conflict research among physicians by Rice, Frone, and McFarlin (1992), Firth, Mellor, Moore, and Loquet (2004), and Warde, Allen, and Gelberg (1996). Responses were made on a Likert-type scale of 1 to 5, 1 denoting ‘not at all’ and 5 ‘very much/extremely often’. The scores on the 3 scales were averaged to yield a summary score. The reliability coefficient (Cronbach’s alpha) of this instrument for our total sample was 0.69 (0.69 and 0.70 for female and male physicians, respectively) (Table 5, Table 6, and Table 7).

3.3.2 Job demands, job control, job strain, and support in the workplace

Job demands, job control, job strain, and support in the workplace as potential work-related antecedents to work-family conflict and somatic as well as psychiatric morbidity including burnout (Lee & Ashforth, 1996) were assessed by a scale adapted from the short version of Karasek’s demand-control-support questionnaire developed by Theorell (2000). Three items investigated job demands and six items focused on job control and support, each. Responses to each question on job demands and job control were given on a Likert-type frequency scale ranging from 1 (never) to 4 (always). Responses to questions on support were assigned to a 4-point Likert scale ranging from ‘strongly agree’ to ‘strongly disagree’. Item scores in each of the domains have been added to yield a summary score. The reliability coefficient was 0.67 for job demands, 0.87 for job control, and 0.77 for support in the workplace. Similar reliability coefficients have been obtained for female and male physicians (Table 5, Table 6, and Table 7). To define job strain, a ratio of job demands to

job control was calculated according to previous research by Theorell, Perski, Akerstedt, Sigala, Ahlberg-Hulten, Svensson, and Eneroth (1988).

3.3.3 Measures of psychological and somatic morbidity

Participants were requested to examine a list of 26 psychological (i.e., depression, panic disorder/anxiety, other psychiatric/psychological diseases (e.g., suicidal ideation), alcohol-related illnesses, and substance abuse) as well as somatic morbidities and symptoms (i.e., neoplasms, diabetes, hepatic diseases, neurological diseases, hypertension, cerebrovascular diseases, myocardial infarction, other cardiovascular diseases (e.g., atherosclerosis), infectious diseases (e.g., tuberculosis), pulmonary diseases (e.g., asthma), allergy, gastrointestinal diseases (e.g., peptic ulcer), renal diseases, musculoskeletal diseases (e.g., rheumatism), ophthalmologic diseases, ear/nose/throat diseases, gynaecological diseases, urological diseases, congenital diseases, tiredness due to sleep deprivation, and sleep disturbance). Physicians were then asked to indicate whether they had suffered from each of the illnesses or whether they had been prescribed any treatment for any of the illnesses. Participants could also add any unlisted ailments. Similar instruments have been successfully used in various nationwide epidemiological studies (Kopp, Csoboth, & Réthelyi, 2004).

3.3.3.1 Perceived anxiety

According to the Diagnostic and Statistical Manual of Mental Disorders – 4th Edition (DSM-IV), anxiety must be associated with some of the following six somatic symptoms: restlessness or feeling keyed up or on edge, being easily fatigued/feeling tired, difficulty concentrating or mind going blank, irritability, muscle tension, and sleep disturbance. Hence, participants who provided an affirmative answer to the questions about treatments prescribed or taken for anxiety or for somatic symptoms associated with anxiety such as

tiredness, and sleep disturbance (adapted from the items of the Symptom Checklist-90 by Brophy, Norvell, & Kiluk, 1988) have been classified as suffering from anxiety.

3.3.3.2 Physician burnout

Burnout was measured using the Maslach Burnout Inventory-Human Services Survey (MBI). The 22-item questionnaire measures each of the three components of burnout (emotional exhaustion or depersonalization, and lack of personal accomplishment) by a separate subscale. Responses are marked on a 7-point Likert scale (0 meaning ‘never’ and 6 meaning ‘every day’). A high degree of burnout among medical professionals is reflected by scores of ≥ 27 on the emotional exhaustion and ≥ 10 on the depersonalization subscales, and a score of ≤ 33 on the personal accomplishment subscale (Maslach, *et al.*, 1996). The reliability coefficients (Cronbach’s alpha) of the emotional exhaustion, depersonalization, and personal accomplishment scales for our total sample were 0.88, 0.71, and 0.80, respectively. Similar reliability coefficients on all subscales have been obtained for female as well as male physicians (Table 5, Table 6, and Table 7).

3.3.4 Job satisfaction

Job satisfaction was defined as a match between expectations and the perceived reality of the job (Bacharach, Bamberger, & Conley, 1991) and was assessed by using a scale adapted from Scarpello and Campbell (1983) and Wanous, Reichers, and Hudy (1997). Physicians were asked to respond to the item “Please, mark the degree of your overall job satisfaction.” on a 5-point Likert scale anchored at ‘not at all’ and ‘very much’. Wanous, *et al.* (1997) showed reasonable convergent validity of single-item measures with scales (average corrected correlations of 0.67).

After gaining approval from the owner where applicable, the instruments were translated from English into Hungarian and validated by back-translation to ensure that both versions were equivalent. The instruments were then provided to a small test group of female and male physicians ($N=16$) who were found to perceive the questions relating to the variables as we had intended.

3.4 Interviews

All female and male participants were randomly assigned a number from 1 to 219 and 1 to 201, respectively. Then, physicians with an even number were asked to participate in face-to-face interviews. Of the 109 female and 100 male physicians selected, 86 and 75 agreed to participation, respectively. Each interview lasted for about an hour and was predominantly conducted in the participant's home or in a neutral environment by the same interviewer. An aide-memoir was used to outline major topics: work characteristics, the work-home interface (direction and type of work-family conflict), parental, spousal, peer, and organizational support. Each support category included questions on provision of emotional and instrumental support (Beehr & McGrath, 1992). Open-ended questions were used in order to give participants freedom to express themselves in their own terms. Work-home interface and work-family conflict was discussed again during the second round of interviews at Time 1 and the level of work-family conflict was reassessed among those physicians only who had reported some degree of work-family conflict during the first round of interviews at Time 0. This test-retest technique provided information about the reliability of the physicians' self-assessed degree of work-family conflict over time. For composing questions on work-family interface, the multidimensional measures of work-family conflict (direction and type) developed by Netemeyer, Boles, and McMurrian, (1996), and by Carlson, Kacmar, and Williams (2000) have been used as a guide. The socio-demographic and work characteristics of the interviewed physicians were comparable to that of the whole population. Only minor differences were observed in the number of children between the two samples (Table 4).

Table 4: Socio-demographic and work characteristics of interviewed physicians.

Variable	All physicians <i>N</i> (%)	Interviewed physicians <i>N</i> (%)
Total sample	420 (100)	133 (100)
Domicile		
Capital	163 (39)	50 (40)
County town	132 (31)	37 (30)
Rural town	97 (23)	30 (24)
Village	28 (7)	7 (6)
Partnered		
Yes	330 (79)	97 (78)
No	90 (21)	27 (22)
Children		
No	63 (15)	10 (8)
Yes	357 (85)	114 (92)
1	85 (24)	23 (20)
2	184 (52)	64 (56)
3	62 (17)	23 (20)
≥4	24 (7)	4 (4)
Type of employment		
Inpatient services	194 (46)	58 (47)
Outpatient services	72 (17)	20 (16)
General practice	91 (22)	29 (19)
Other	63 (15)	23 (18)

3.5 Data analyses

3.5.1 Analyses to explore intercorrelations among study variable as well as the level and prevalence of perceived work-family conflict among physicians

Correlations among the variables were assessed by determining Pearson's correlation coefficients. Mean scores and standard deviation (SD) for the three scales of work-family conflict were calculated for each participant at Time 0. Scores were reassessed for physicians participating in the interviews ($N=123$) at Time 1. As they did not differ significantly from those at Time 0, they were omitted from further analyses. Subsequently, descriptive statistics (mean, SD, frequency counts) were performed to establish the level of perceived work-family conflict and the proportion of physicians suffering from work-family conflict often and very often. To explore gender disparity in the perceived level of work-family conflict, the difference in the mean level of perceived work-family conflict between female and male physicians was compared by independent samples *t*-test.

3.5.2 Analyses to explore associations between work-family conflict and social support

To explore associations between work-family conflict and social (i.e., familial, spousal, peer, and organizational) support, a series of independent sample *t*-tests were performed and the means (SD) of work-family conflict among female and male physicians as well as in the whole sample between physicians who experience social support and those who do not were compared.

3.5.3 Regression analyses to identify potential antecedents to work-family conflict

To identify whether variables associated with socio-demographic and work characteristics predict work-family conflict experienced by physicians, stepwise linear regression analyses were performed. The strength and direction of relationships between the continuous dependent variable (work-family conflict) and explanatory variables (age, gender, number of children, average daily work hours, job demands, job control, job strain, and support in the workplace) were assessed by regression coefficients (adjusted β), 95% confidence intervals, and *t*-test statistics. In addition, the proportion of the variance in the dependent variable explained by the explanatory variables (adjusted R^2) has also been determined.

3.5.4 Analyses of gender differences in self-reported psychological and somatic morbidity as well as its associations with work-family conflict among physicians

Frequency counts were performed to identify the proportion of female and male physicians suffering from any of the listed diseases. Gender differences in the number of physicians suffering from a particular disease were assessed using a series of chi-square tests. To explore the relationship between the prevalence of disease and work-family conflict further, differences in the level of perceived work-family conflict among female and male physicians as well as in the whole sample between those with or without a particular disease were assessed by independent samples *t*-tests.

To assess gender disparity in the level of perceived burnout, mean and standard deviation (SD) of each of the MBI subscale scores were calculated for the whole sample as well as for female and male physicians separately, and the differences in the mean scores on each burnout dimension between female and male physicians were calculated by independent

samples *t*-tests. Based on MBI subscale scores, physicians were then categorized into two groups of experienced burnout, i.e., high and low/moderate levels of burnout according to cut-off scores identified in a normative population (Maslach, *et al.*, 1996). Gender differences in the number of physicians experiencing high levels of burnout on each of the MBI dimensions were assessed using a series of chi-square tests. To explore associations between burnout and work-family conflict, differences in the level of perceived work-family conflict between female and male physicians and between those with or without high levels of burnout were explored by independent samples *t*-tests.

3.5.5 Regression analyses to identify stressors associated with psychological and somatic morbidity among physicians

To identify stressors of psychological and somatic diseases among female and male physicians, binomial logistic regression analyses were performed and the strength and direction of linear relationships between the dichotomised dependent variable (presence of disease vs. no disease) and categorical and/or continuous explanatory variables (age, gender, work-family conflict, job stress, job demand, and support in the workplace) were assessed by determining regression parameters (B), odd ratios (OR), 95% confidence intervals, and Wald-statistics. Odd ratios show how 1 unit change on the scale of the explanatory continuous variable (or the presence of the explanatory categorical variable compared to a reference variable) may increase or decrease the probability of developing the disease (the dependent variable). For categorical variables, the missing variable of the corresponding category serves as a reference variable.

To identify stressors that are associated with burnout among female and male physicians, stepwise linear regression analyses were performed and the strength and direction of relationships between the continuous, dependent variables (emotional exhaustion, depersonalization, personal accomplishment) and explanatory variables (age, job stress, job demands, job control, number of children, average daily work hours, and work-family

conflict) were assessed by determining regression coefficients (adjusted β), 95% confidence intervals (95% CI), and *t*-test statistics. Gender and type of employment (inpatient/outpatient services, general practice and other establishments) have been controlled for in the analyses. In addition, the proportion of the variance in the dependent variable explained by the explanatory variables (adjusted R^2) has also been determined.

3.5.6 Analyses to assess the level of job satisfaction and its associations with work-family conflict

Descriptive statistics were performed to assess the mean level of job satisfaction among female and male physicians as well as in the whole sample. Differences in the level of job satisfaction between female and male physicians were explored by independent samples *t*-tests. In order to facilitate interpretation of results, physicians scoring ‘satisfied’ or ‘very satisfied’ (a score of 4 or 5 on the job satisfaction scale) as well as those scoring ‘not at all satisfied’ and ‘minimally satisfied’ (a score of 1 and 2 on the job satisfaction scale) were grouped. Gender differences in the number of physicians reporting high degree of job satisfaction and job dissatisfaction (a score of 4 or 5 and 1 and 2 on the job satisfaction scale, respectively) were assessed using a series of chi-square tests. To explore associations between job satisfaction and work-family conflict, differences in the level of perceived work-family conflict among female and male physicians as well as in the whole sample between those who reported a high degree of job satisfaction (a score of 4 or 5 on the job satisfaction scale) and those who did not (a score of 1, 2, and 3 on the job satisfaction scale) were assessed by independent samples *t*-tests.

3.5.7 Regression analyses to identify stressors associated with job satisfaction

To identify stressors that are associated with job satisfaction among physicians, stepwise linear regression analyses were performed and the strength and direction of relationships between the dependent variable (job satisfaction) and explanatory variables (age, job stress, job demands, job control, support in the workplace, workload, number of children, type of employment, gender, emotional exhaustion, depersonalization, personal accomplishments, average daily work hours, and work-family conflict) were assessed by determining regression coefficients (adjusted β), 95% confidence intervals (95% CI), and *t*-test statistics. In addition, the proportion of the variance in the dependent variable explained by the explanatory variables (adjusted R^2) has also been determined.

3.5.8 Content analysis of interview data

Data from the interviews have been analysed using content analysis (Weber, 1990). Data were transcribed into a written format and transcripts were then evaluated independently by two raters to construct a classification system with high-level categories and subcategories (emerging themes). The following categories and subcategories have been established for the taxonomy: direction of work-family conflict (work-to-family and family-to-work conflict), type of work-family conflict (time/strain/behaviour-based conflict), emotional parental support in career selection, spousal support with household duties, peer support (i.e., access to same-sex professional role model or mentor, gender equity), and organizational support (i.e., family-friendly policies at work such as work-time flexibility, counselling, re-training programmes, crèche and kindergarten facilities). The transcripts were then coded by the raters independently. Codes were assigned to phrases, parts of phrases and words. Raters then reviewed all the codes together and elements that were coded differently have been re-examined and re-coded to reach a consensus, which allows

for full use of data. Frequency counts have then been performed to explore a particular theme that emerged in the data. Only those physicians who reported some degree of work-family conflict have been included in these analyses (72 female physicians and 51 male physicians) in order to gain a detailed insight into the psychosocial characteristics of social support and work-family conflict. Gender differences in the direction and type of perceived work-family conflict as well as in the prevalence of parental, spousal, peer, and organizational support were assessed using a series of chi-squared tests.

A *p* value of $<.05$ was considered as statistically significant. The statistical software used for all analyses was SPSS, version 13.0 (SPSS Inc., Chicago, Illinois, USA).

CHAPTER FOUR

RESULTS

4.1 Intercorrelations among study variables

To explore correlations among potential outcome and explanatory variables, Pearson's correlation coefficients were calculated among female and male physicians as well as in the total sample. According to Cohen and Holliday's (1982) rule of thumb, correlations between 0.40 and 0.69 are considered to be moderate, whereas correlations exceeding 0.69 are considered to be high. In our samples, mild to moderate to strong correlations were observed, which ranged from $r = -.10$ to $r = .77$. As expected, the strongest correlates of work-family conflict among female physicians were job demands ($r = .64$; $p < .001$), job stress ($r = .60$; $p < .001$), and emotional exhaustion ($r = .54$; $p < .001$). Support in the workplace ($r = -.43$; $p < .001$), job control ($r = -.39$; $p < .001$), tiredness due to sleep deprivation ($r = .30$; $p < .001$), depersonalization ($r = .28$; $p < .001$), average daily work hours ($r = .25$; $p < .001$), workload ($r = .25$; $p < .001$), job satisfaction ($r = -.17$; $p < .05$), and personal accomplishment ($r = -.16$; $p < .05$) also correlated with work-family conflict. Support in the workplace, job control, job satisfaction, and personal accomplishment showed an inverse relationship with work-family conflict among female physicians (Table 5). Similar associations were observed between work-family conflict experienced by male physicians and other variables with the exception of personal accomplishment and job satisfaction, which did not appear to correlate with work-family conflict (Table 6). As shown in Table 7, the correlates of work-family conflict in the whole sample were the same as those among female physicians.

As expected, the three burnout dimensions (emotional exhaustion, depersonalization, and personal accomplishment) were correlated with one another in all three subset of the sample. The strongest relationship could be observed between emotional exhaustion and depersonalization ($r = .54$; $p < .001$; $r = .69$; $p < .001$; $r = .60$; $p < .001$; for females, males, and the whole sample, respectively) (Table 5, Table 6, and Table 7). In addition, emotional exhaustion was also correlated with job demands ($r = .77$; $p < .001$), job stress ($r = .59$; $p < .001$), support in the workplace ($r = -.35$; $p < .001$), job control ($r = -.30$; $p < .001$),

workload ($r = .30; p < .001$), average daily work hours ($r = .24; p < .001$), and tiredness due to sleep deprivation ($r = .15; p < .01$) in the whole population (Table 7). The order and strength of the correlations were similar between these variables among female physicians (Table 5). Job satisfaction showed a significant inverse relationship with emotional exhaustion only among male physicians ($r = -.14; p < .05$). Tiredness due to sleep deprivation did not appear to correlate with emotional exhaustion among male physicians (Table 6). Among female physicians, job stress ($r = .32; p < .001$), job demands ($r = .30; p < .001$), and personal accomplishment ($r = -.33; p < .001$) showed the strongest correlation with depersonalization. Support in the workplace, average daily work hours and job satisfaction did not correlate significantly with depersonalization in this sample of physicians (Table 5). Among male physicians and in the whole sample, depersonalization correlated well with all work-related variables except job satisfaction (Table 6 and Table 7). Personal accomplishment showed a significant linear relationship with job control ($r = .25; p < .001$) and job satisfaction ($r = .17; p < .05$) among female physicians (Table 5), with job control ($r = .16; p < .05$) among male physicians (Table 6), and with job control ($r = .20; p < .001$) in the whole sample (Table 7). Job stress ($r = -.13; p < .01$), and workload ($r = -.11; p < .05$) showed an inverse correlation with personal accomplishment in the whole population (Table 7).

Job satisfaction was correlated with work-family conflict ($r = -.17; p < .05$) and personal accomplishment ($r = .17; p < .05$) among female physicians. In addition, it showed an inverse relationship with the number of children ($r = -.14; p < .05$) (Table 5). Among male physicians, job satisfaction showed a significant inverse correlation only with emotional exhaustion ($r = -.14; p < .05$) (Table 6). In the whole sample, work-family conflict ($r = -.14; p < .01$), job demands ($r = -.10; p < .05$), and workload ($r = -.13; p < .01$) correlated with job satisfaction (Table 7).

Of note, support in the workplace showed a significant inverse relationship with job demands among female and male physicians as well as in the whole sample (Table 5, Table 6, and Table 7). In addition, job demands, job control and job stress showed significant

correlations with tiredness due to sleep deprivation among female physicians but not among male physicians. These results indicate that the variables discussed above were associated entities but independent constructs.

Our results also show significant gender differences in the level of perceived psychosocial work characteristics. Female physicians experienced significantly lower support in the workplace ($t(df): 2.3 (418); p < .05$), higher job demands ($t(df): -5.4 (418); p < .001$), higher job stress ($t(df): -2.3 (418); p < .05$), and higher workload ($t(df): -7.5 (418); p < .001$) (Table 5 and Table 6).

4.2 High level and prevalence of work-family conflict among female physicians

As hypothesized, female physicians reported significantly higher level of work-family conflict compared to male physician (3.0 (SD 0.9) vs. 2.6 (SD 0.9); $t(df): -3.8 (418); p < .001$). Furthermore, significantly more female than male physicians experienced work-family conflict often or extremely often (56.2% vs. 41.3%, respectively; $\chi^2(df) = 9.3 (1); p < .01$). Almost all physicians (99%) reported some degree of work-family conflict (a score of 2-5 on any of the measuring scales).

4.3 Gender disparity in the direction and type of work-family conflict

To explore the direction (i.e., work-to-family or family-to-work conflict) and type (time/strain/behaviour-based) of work-family conflict among physician mothers, in-depth interviews have been conducted and the data analysed using content analyses. Absolute frequency counts of a particular theme emerging among the physicians are shown in Table 8. In line with our second hypothesis, significantly more female than male physicians reported family-to-work conflict (39% vs. 18%, respectively). However, comparably high

proportions of female and male physicians experienced work-to-family conflict (79% vs. 88%, respectively). Female physicians reported significantly more strain-based work-family conflict whereas male physicians experienced significantly more time-based work-family conflict. The prevalence of behaviour-based work-family conflict was relatively low among the physicians (around 10%).

Table 5: Means, standard deviations, and intercorrelations of the study variables among female physicians (N=219).

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Age	48.7	9.8	-													
2 Number of children	1.6	1.0	.21**	-												
3 Work-family conflict	3.0	0.9	-.14*	.10	(.69)											
4 Emotional exhaustion	20.8	10.8	-.07	-.03	.54***	(.87)										
5 Depersonalization	5.0	4.9	-.06	-.02	.28***	.54***	(.71)									
6 Personal accomplishment	35.3	7.6	.08	-.05	-.16*	-.30***	-.33***	(.80)								
7 Job demands	9.1	2.3	.01	.07	.64***	.75***	.30***	-.06	(.64)							
8 Job control	16.8	4.4	-.01	.05	-.39***	-.34***	-.24***	.25***	-.34***	(.86)						
9 Support in the workplace	15.7	3.9	-.01	-.09	-.43***	-.27***	-.11	.09	-.36***	.26***	(.78)					
10 Job stress	0.6	0.3	.04	.02	.60***	.58***	.32***	-.13	.68***	-.81***	-.37***	-				
11 Average work hours/day	12.7	3.2	-.15*	-.07	.25***	.20**	.08	.03	.29***	-.11	-.18**	.18**	-			
12 Workload	2.9	1.3	-.04	.05	.25***	.25***	.14*	-.11	.40***	.18**	-.06	.04	.23***	-		
13 Job satisfaction	3.5	0.9	-.02	-.14*	-.17*	-.03	.01	.17*	-.05	-.01	-.07	-.02	.03	-.14*	-	
14 Tiredness due to sleep deprivation	2.6	0.6	.09	.03	-.30***	-.23***	-.10	.09	-.19**	.21**	-.03	-.30***	-.10	.05	.10	-

* $p < .05$; ** $p < .01$; *** $p < .001$

Note: Items in main diagonal are Cronbach's alpha reliability coefficients.

Table 6: Means, standard deviations, and intercorrelations of the study variables among male physicians (N=201).

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Age	50.1	11.1	-													
2 Number of children	1.9	1.1	.24***	-												
3 Work-family conflict	2.6	0.9	-.20**	.03	(.70)											
4 Emotional exhaustion	16.6	11.3	-.13	-.05	.71***	(.90)										
5 Depersonalization	5.3	5.1	-.19**	.04	.50***	.69***	(.73)									
6 Personal accomplishment	35.7	8.2	-.15*	.08	-.11	-.24***	-.23***	(.82)								
7 Job demands	7.9	2.5	-.14*	-.01	.77***	.77***	.47***	-.07	(.66)							
8 Job control	16.5	4.6	.07	.20**	-.23***	-.25***	-.16*	.16*	-.23**	(.88)						
9 Support in the workplace	16.6	3.7	.04	.01	-.53***	-.41***	-.30***	.01	-.43***	.03	(.75)					
10 Job stress	0.5	0.3	-.14	-.15*	.60***	.60***	.37***	-.13	.69***	-.77***	-.27***	-				
11 Average work hours/day	12.8	3.4	-.28***	.10	.43***	.29***	.18**	.02	.38***	-.17*	-.23***	.34***	-			
12 Workload	2.0	1.1	.13	-.02	.27***	.27***	.17*	-.12	.28**	.16*	-.23***	.02	.09	-		
13 Job satisfaction	3.7	0.7	.05	.01	-.09	-.14*	-.08	-.08	-.13	-.06	-.01	-.04	-.01	-.06	-	
14 Tiredness due to sleep deprivation	2.7	0.7	.01	-.10	-.17*	-.07	-.06	-.04	-.06	.04	-.02	-.12	-.03	.11	.01	-

* $p < .05$; ** $p < .01$; *** $p < .001$

Note: Items in main diagonal are Cronbach's alpha reliability coefficients.

Table 7: Means, standard deviations, and intercorrelations of the study variables among all physicians (N=420).

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Age	49.4	10.5	-													
2 Number of children	1.8	1.1	.23***	-												
3 Work-family conflict	2.8	0.9	-.18***	.04	(.69)											
4 Emotional exhaustion	18.7	11.3	-.11*	-.06	.64***	(.88)										
5 Depersonalization	5.2	5.0	-.13**	.01	.38***	.60***	(.71)									
6 Personal accomplishment	35.4	8.1	-.04	.02	-.14**	-.27***	-.27***	(.80)								
7 Job demands	8.5	2.5	-.08	.01	.72***	.77***	.37***	-.06	(.67)							
8 Job control	16.7	4.5	.03	.12*	-.30***	-.30***	-.20***	.20***	-.27***	(.87)						
9 Support in the workplace	16.1	3.8	.02	-.03	-.49***	-.35***	-.20***	.05	-.41***	.15**	(.77)					
10 Job stress	0.6	0.3	-.06	-.07	.60***	.59***	.34***	-.13**	.69***	-.78***	-.33***	-				
11 Average work hours/day	12.7	3.3	-.22***	.01	.33***	.24***	.13**	.02	.32***	-.14**	-.20***	.25***	-			
12 Workload	2.5	1.3	.02	-.02	.30***	.30***	.13**	-.11*	.40***	.17***	-.16***	.07	.15**	-		
13 Job satisfaction	3.6	0.8	.02	-.07	-.14**	-.09	-.03	.06	-.10*	-.03	-.04	-.04	.02	-.13**	-	
14 Tiredness due to sleep deprivation	2.6	0.7	.05	-.03	-.24***	-.15**	-.08	.02	-.13**	.13*	-.02	-.22***	-.06	.06	.07	-

* $p < .05$; ** $p < .01$; *** $p < .001$

Note: Items in main diagonal are Cronbach's alpha reliability coefficients.

Table 8: Gender disparity in the psychosocial characteristics of work-family conflict among physicians: content analysis of interview data.

Category/Subcategory	Female physicians	Male physicians	Difference test (df)
	N=72 Absolute frequency (%)	N=51 Absolute frequency (%)	
Work-family interface			
Work-to-family conflict	57 (79)	45 (88)	NS ^a
Family-to-work conflict	28 (39)	9 (18)	$\chi^2=6.40 (1)^*$
Time-based conflict	36 (50)	42 (82)	$\chi^2=13.46 (1)^{***}$
Strain-based conflict	49 (68)	10 (20)	$\chi^2=28.07 (1)^{***}$
Behaviour-based conflict	9 (13)	5 (10)	NS ^a

^a NS: Not significant

* $p < .05$, *** $p < .001$

The following interview excerpts are representative of the population.

Transcript No. 58, female, strain-based work-to-family conflict:

“I felt constantly stressed at home because of my work. I really wanted to prove to my colleagues that I could do my job as well as or even better than they did despite the fact that I had two young children. But I could only cope with my workload by making my children attend crèche and kindergarten early, perhaps, too early. I was ridden with guilt all the time because I thought that I could not attend to my children fully.”

Transcript No. 34, female, family-to-work conflict:

“I do not think that I was able to concentrate on my profession fully when my children were still young. I ran home after work to look after my family, husband included, and sometimes even during work to check on my children. To tell the truth, it really made me angry that I needed to postpone my professional career because of my family.”

Transcript No. 26, female, time-based work-to-family conflict:

“I always wanted to become a doctor. Although my father had objected saying that it did not suit me, I still went ahead with my plans. The problems started when I had my first child. I returned to work only a few months after giving birth. [...] because I really wanted to. I wanted to prove that one can be a perfect mother and doctor at the same time. Looking back, I think I just wanted to prove it to myself. I really worked hard and had rarely time for my family. My mother helped me with the children and household work; otherwise I could not have coped. However, after my second child, my husband could not take it any more and told me that I should concentrate on my family because our relationship had started to deteriorate. I was shocked to hear this and was perplexed to realize how my job blinded me over the years. After a painful period of time spent on re-evaluating my career and personal life, I decided on a career change and sat for the board exam in Occupational Medicine. Although now I have to work less, I am still a good doctor. More importantly, I am a better mother and wife.”

Transcript No 24., male, time-based work-to-family conflict:

“I simply have no time for the family. I work late hours. When I come home the children are already asleep. It is sad, isn't it.”

4.4 Gender differences in perceived social (i.e., parental, spousal, peer, and organizational) support among physicians

In agreement with our third hypothesis, with the exception of organizational support, significantly less female physicians experienced social support compared to men (Table 9). Parental support was referred to by physicians as emotional support in career selection. Significantly more female than male physicians reported lack of parental support (42% vs. 22%, respectively). A large proportion of the female physicians were discouraged by parents (predominantly by fathers) to embark upon a career in medicine. These respondents were forewarned about the male hegemony of the medical profession and were reminded that the woman's place was in the home especially if one had young children.

Transcript No 8., female:

“My father was not particularly happy that I wanted to become a physician. He said that a woman's vocation was to be a mother and look after the family. Nevertheless, he was quite supportive of advancing my education and hoped that eventually I would change my mind and find a job that was more suitable to women.”

Spousal support with household duties was reported by significantly more male than female physicians (90% vs. 22%, respectively). In addition, inferences of lack of emotional support from the spouse have been made by female physicians. Respondents stated that instrumental support from grandmothers (not the husband) is a *sine qua non* for accommodating the professional and the domestic roles suggesting that gender-specific social rules concerning the distribution of domestic responsibilities are still strongly adhered to (Table 9).

Transcript No 48., female:

“My husband always tells me, jokingly, of course, that a woman’s place is in the home. He says that he earns enough to provide for the family. After all the years, I am not sure he means it as a joke. Mind you, he was brought up with very traditional values. It bothers me that he always responds with this sexist nonsense when I tell him how tired I am instead of offering to help me with household duties.”

Transcript No. 26, female:

“...My mother helped me with the children and household work; otherwise I could not have coped.”

In terms of peer support, two major themes emerged during content analysis of interview data. One theme was access to or availability of same-sex professional role models or mentors during career selection, medical training or professional life and the second was lack of gender discrimination operationalized by physicians as provision of equal opportunities in the workplace to both men and women through non-discriminatory behaviours, actions, procedures, or interactions with peers, or the lack of hostile or intimidating environment. Significantly more female than male physicians reported that lack of or no access to same-sex professional role models might have contributed to their level of perceived distress (79% vs. 43%, respectively) (Table 9).

Transcript No 4., female:

“No-one was a physician let alone a female physician in my family or among our friends so I could not have known the obstacles and stresses of being a female physician. Hence, I could not prepare myself.”

Gender discrimination as defined above has been reported by significantly more female physicians (63%) compared to only 6% of male physicians (Table 9). Female physicians frequently experienced questions about their plans to have a family and ability to combine family and professional demands. Department chairmen were often reluctant to employ a woman resident or specialist because of the greater probability that she may not be able to work full time due to her family responsibilities. A significant number of women have surrendered their primary choice of specialty because of difficulties in obtaining suitable training posts or unfavourable career prospects.

Transcript No 62., female:

“The male chauvinism I experienced at the university and even at teaching hospitals did influence my career choice. It played an important role in my decision to apply for residency in paediatrics rather than surgery. I knew that it would have been an uphill struggle for the rest of my life if I had been granted a place.”

Transcript No 50., female:

“I felt discriminated against already at the university. All the women in my study group had to work harder to get the same mark [by tutors as means of recognition] compared to men.”

Transcript No 62., female:

“I asked my [male] boss if I could take three years [the maximum duration guaranteed by law] of maternity leave. My boss asked me if I was really dedicated to my profession and alluded to the fact that I might lose my job by saying that he might need to find

someone else to fill my job if I decided to stay at home long. Needless to say, I opted for no maternity leave.”

Lack of organizational support including family-friendly policies such as crèche and kindergarten facilities, flexible working hours, counselling, or part-time work has been identified by around half of both female and male physicians (Table 9), however, only female physicians alluded to associations between lack of organizational support and distress.

Transcript No 72., female:

“There are not enough crèche and kindergarten facilities to make mothers’ lives easier. Part-time work may not be ideal either, because one just cannot drop the stethoscope and go home when the queue of patients is miles long. One can change jobs though and leave the profession.”

Table 9: Gender disparity in social support among physicians: content analysis of interview data.

Category/Subcategory	Female physicians	Male physicians	Difference test
	<i>N</i> =72	<i>N</i> =51	(df)
	Absolute frequency (%)	Absolute frequency (%)	
Social Support			
Parental support in career selection	42 (58)	40 (78)	$\chi^2=5.42 (1)^*$
Spousal support with household duties	16 (22)	46 (90)	$\chi^2=55.17 (1)^{***}$
Peer support			
Gender equity	27 (37)	48 (94)	$\chi^2=40.21 (1)^{***}$
Access to same-sex professional role model/mentor	15 (21)	29 (57)	$\chi^2=16.86 (1)^{***}$
Organizational support			
Family-friendly policies ^a	34 (47)	23 (45)	NS ^b

^a Work-time flexibility, counselling, re-training programmes, crèche and kindergarten facilities

^b NS: Not significant

* $p < .05$, *** $p < .001$

4.5 Work-family conflict is associated with lack of social (i.e., parental, spousal, peer, and organizational) support among physicians

Associations between work-family conflict and psychosocial characteristics of social (i.e., parental, spousal, peer, and organizational) support among interviewed physicians ($N=123$) were explored with a series of independent sample *t*-tests. As shown in Table

10, physicians who experienced lack of spousal, peer (i.e., access to same-sex role model/mentor or gender equity), or organizational (i.e., family-friendly policies) support reported significantly higher level of work-family conflict compared to those who did experience social support. As hypothesized, female physicians ($N=72$) who lacked parental, peer, or organizational support experienced significantly higher work-family conflict compared to those who did not lack social support. Lack of spousal instrumental support among female physicians was not associated with higher level of work-family conflict. Finally, among male physicians ($N=51$), lack of social support (parental, spousal, peer, or organizational) support did not appear to be associated with changes in the level of perceived work-family conflict (data not shown).

Table 10: Associations between work-family conflict and lack of social (i.e., parental, spousal, peer, and organizational) support among physicians.

	All physicians (N=123)			Female physicians (N=72)		
	Work-family conflict		t(df)	Work-family conflict		t(df)
	Mean (SD)			Mean (SD)		
Social support	Yes	No		Yes	No	
Parental support in career selection	3.1 (0.8)	3.2 (0.9)	NS ^b	3.2 (0.8)	3.6 (0.8)	2.2 (70)*
Spousal support with household duties	2.9 (0.8)	3.5 (0.8)	-3.9 (121)***	3.2 (0.7)	3.5 (0.8)	NS ^b
Peer support (gender equity)	2.8 (0.7)	3.7 (0.6)	-6.1 (121)***	3.0 (0.7)	3.7 (0.7)	-4.1 (70)***
Peer support (access to same-sex professional role model/mentor)	2.6 (0.6)	3.5 (0.8)	-5.6 (121)***	2.4 (0.3)	3.7 (0.7)	-6.8 (70)***
Organizational support (family-friendly policies ^a)	3.0 (0.7)	3.3 (0.9)	-2.5 (121)*	3.1 (0.6)	3.7 (0.8)	-3.9 (70)***

^a Work time flexibility, counselling, re-training programmes, crèche and kindergarten facilities

^b NS: Not significant

* $p < .05$, *** $p < .001$

4.6 Stressors associated with work-family conflict: lack of support in the workplace as a significant predictor

In order to identify potential socio-demographic and work-related predictors of perceived work-family conflict among physicians ($N=420$), stepwise linear regression analyses were performed. Six models have been examined. The models were significant for each step as determined by F statistics (data not shown). Of the potential stressors examined (gender, age, job strain, job demands, job control, support in the workplace, number of children, and average daily work hours), job demands ($\beta= 0.44$, 95% CI 0.13 – 0.20), job strain ($\beta= 0.21$, 95% CI 0.18 – 0.43), average daily work hours ($\beta= 0.07$, 95% CI 0.001 – 0.04), number of children ($\beta= 0.07$, 95% CI 0.001 – 0.11) predicted work-family conflict best. In addition, and as hypothesized, support in the workplace ($\beta= -0.22$, 95% CI -0.07 – -0.04) and age ($\beta= -0.13$, 95% CI -0.02 – -0.006) showed a statistically significant inverse predictive relationship with work-family conflict. These predictors explained around 59% of the variance in work-family conflict (Table 11).

Table 11: Stressors of work-family conflict among physicians (N=420): stepwise linear regression analyses.

Dependent variable	Independent variables	Standardized β	95% Confidence intervals	<i>t</i>	Adjusted R^2
Work-family conflict	Constant		1.64 – 2.72	7.99***	0.59
	Job demands	0.44	0.13 – 0.20	9.49***	
	Support in the workplace	-0.22	-0.07 – -0.04	-6.47***	
	Job strain	0.21	0.18 – 0.43	4.86***	
	Age	-0.13	-0.02 – -0.006	-3.96***	
	Average daily work hours	0.07	0.001 – 0.04	2.05*	
	Number of children	0.07	0.001 – 0.11	2.02*	

* $p < .05$, *** $p < .001$

4.7 High prevalence of somatic and psychological morbidity among physicians

As shown in Table 12, of the somatic and psychological diseases as well as symptoms examined, anxiety (54.8%), sleep disturbance (38.3%), tiredness due to sleep deprivation (36.8%), low level of personal accomplishment) (35.2%), hypertension (31.7%), high level of emotional exhaustion (25.3%), gastrointestinal diseases (e.g., peptic ulcer) (20.2%), other cardiovascular diseases (e.g., atherosclerosis) (19.3%), high level of depersonalization (16.9%), allergy (16.0%), gynaecological diseases (15.2%), musculoskeletal diseases (e.g., rheumatism) (13.6%), neoplasms (11.9%), and ophthalmologic diseases (10.7%) were reported frequently by physicians. The most prevalent chronic diseases reported by female physicians were anxiety (53.9%),

tiredness due to sleep deprivation (39.3%), sleep disturbance (38.8%), and burnout (low level of personal accomplishment (34.7%). Among male physicians, anxiety (55.7%), hypertension (42.8%), sleep disturbance (38.8%), and burnout (low level of personal accomplishment) (35.8%) were reported most frequently.

4.8 Gender differences in the prevalence and level of psychological and somatic morbidity among physicians: burnout and allergy are more prevalent among female physicians whereas hypertension and myocardial infarction are more widespread among male doctors

To assess gender differences in the reported prevalence of somatic as well as psychological morbidity, a series of chi-square tests were performed. Contrary to our hypothesis, significant gender disparity could only be observed in the prevalence of certain somatic as well as psychological diseases. Namely, significantly more male physicians suffered from hypertension and myocardial infarction compared to female physicians (42.8% vs. 21.5%, respectively; $\chi^2(df)=22.0$ (1); $p < .001$ for hypertension; and 7.5% vs. 1.4%, respectively; $\chi^2(df)=9.5$ (1); $p < .01$ for myocardial infarction). In addition, significantly more female physicians experienced high levels of emotional exhaustion and allergy compared to male physicians (30.6% vs. 19.4%, respectively; $\chi^2(df) 7.0(1)$; $p < .01$ for emotional exhaustion; and 20.1% vs. 11.4%, respectively; $\chi^2(df)=5.8$ (1); $p < .05$ for allergy) (Table 12).

Table 12: Gender differences in the prevalence of self-reported psychological and somatic morbidity among physicians.

	All physicians N (%)	Female physicians N (%)	Male physicians N (%)	Difference test (df)
Anxiety ^a	230 (54.8)	118 (53.9)	112 (55.7)	NS ^b
Sleep disturbance	161 (38.3)	85 (38.8)	76 (38.8)	NS ^b
Tiredness due to sleep deprivation ^d	155 (36.8)	86 (39.3)	69 (34.3)	NS ^b
Low level of personal accomplishment ^e	148 (35.2)	76 (34.7)	72 (35.8)	NS ^b
Hypertension	133 (31.7)	47 (21.5)	86 (42.8)	$\chi^2=22.0 (1)***$
High level of emotional exhaustion ^f	106 (25.3)	67 (30.6)	39 (19.4)	$\chi^2=7.0 (1)**$
Gastrointestinal diseases (e.g., peptic ulcer)	85 (20.2)	44 (20.1)	41 (20.4)	NS ^b
Other cardiovascular diseases (e.g., atherosclerosis)	81 (19.3)	44 (20.1)	37 (18.4)	NS ^b
High level of depersonalization ^g	71 (16.9)	37 (16.9)	37 (16.9)	NS ^b
Allergy	67 (16.0)	44 (20.1)	23 (11.4)	$\chi^2=5.8 (1)*$
Gynaecological diseases	64 (15.2)	64 (29.2)	-	NA ^c
Musculoskeletal diseases (e.g., rheumatism)	57 (13.6)	30 (13.7)	27 (13.4)	NS ^b
Neoplasms	50 (11.9)	21 (9.6)	29 (14.4)	NS ^b
Ophthalmologic	45 (10.7)	23 (10.5)	22 (10.9)	NS ^b

	All physicians N (%)	Female physicians N (%)	Male physicians N (%)	Difference test (df)
diseases				
Diabetes	35 (8.3)	14 (6.4)	21 (10.4)	NS ^b
Infectious diseases (e.g., tuberculosis)	35 (8.3)	23 (10.5)	12 (6.0)	NS ^b
Depression	34 (8.1)	20 (9.1)	14 (7.0)	NS ^b
Ear/Nose/Throat diseases	33 (7.9)	21 (9.6)	12 (6.0)	NS ^b
Pulmonary diseases (e.g., asthma)	30 (7.1)	19 (8.7)	11 (5.5)	NS ^b
Renal diseases	21 (5.0)	7 (3.2)	14 (7.0)	NS ^b
Myocardial infarction	18 (4.3)	3 (1.4)	15 (7.5)	$\chi^2=9.5$ (1)**
Urological diseases	18 (4.3)	-	18 (9.0)	NA ^c
Hepatic diseases	15 (3.6)	5 (2.3)	10 (5.0)	NS ^b
Neurological diseases	9 (2.1)	4 (1.8)	5 (2.5)	NS ^b
Other psychiatric/ psychological diseases (e.g., suicidal ideation)	6 (1.4)	3 (1.4)	3 (1.5)	NS ^b
Congenital diseases	5 (1.2)	3 (1.4)	2 (1.0)	NS ^b
Alcohol-related illnesses	4 (1.0)	1 (0.5)	3 (1.5)	NS ^b
Cerebrovascular diseases	2 (0.5)	1 (0.5)	1 (0.5)	NS ^b
Substance abuse	2 (0.5)	1 (0.5)	1 (0.5)	NS ^b

^a Prevalence of self-reported anxiety and associated somatic symptoms such as tiredness, and sleep disturbance.

^b NS: Not significant

^c NA: Not applicable

^d Physicians reporting tiredness ‘often’ and ‘very often’.

^e Defined as a score of ≥ 27 on the emotional exhaustion subscale of the MBI.

^f Defined as a score of ≥ 10 on the depersonalization subscale of the MBI.

^g Defined as a score of ≤ 33 on the personal accomplishment subscale of the MBI.

* $p < .05$, ** $p < .01$, *** $p < .001$

In order to assess gender differences in the mean score of all burnout dimensions (emotional exhaustion, depersonalization, and personal accomplishments), independent samples *t*-tests were performed. All respondents ($N=420$) answered all 22 items of the MBI. The mean score for the emotional exhaustion subscale was 20.8 (SD 10.8), 16.6 (SD 11.3), and 18.8 (SD 11.2) for female and male physicians as well as for the total sample, respectively. The mean score for the depersonalization subscale was 5.0 (SD 4.9) among female physicians, 5.3 (SD 5.1) for male physicians, and 5.1 (SD 5.0) for the whole sample. The mean score for the personal accomplishment subscale was 35.3 (SD 7.6) among women, 35.7 (SD 8.2) among men physicians, and 35.5 (SD 7.9) among the whole sample. Female physicians scored significantly higher on the emotional exhaustion subscale compared to male physicians ($t(df): -3.9(418); p < .001$) (Table 13).

Table 13: Gender disparity in the level of burnout among female and male physicians.

	Female physicians Mean (SD)	Male physicians Mean (SD)	Difference test (df)
Burnout			
Emotional exhaustion	20.8 (10.8)	16.6 (11.3)	$t = -3.9 (418)***$
Depersonalization	5.0 (4.9)	5.3 (5.1)	NS ^a
Personal accomplishment	35.3 (7.6)	35.7 (8.2)	NS ^a

^a NS: Not significant

*** $p < .001$

4.9 Work-family conflict is associated with somatic as well as psychological morbidity among physicians

Associations between work-family conflict and somatic as well as psychological morbidity were explored with a series of independent sample *t*-tests. As hypothesized, physicians suffering from cardiovascular diseases (i.e., myocardial infarction, hypertension, and other diseases such as atherosclerosis), malignant diseases, psychiatric/psychological diseases (i.e., depression, anxiety, high level of burnout, and other diseases such as suicidal ideation), gastrointestinal diseases, and neurological diseases reported significantly higher level of work-family conflict. Among female physicians, the prevalence of myocardial infarction, low level of personal accomplishment, and neurological diseases did not appear to correlate significantly with a higher level of work-family conflict, however, strong associations of work-family conflict was observed with all other previously mentioned illnesses and, in addition, with gynaecological diseases. Work-family conflict showed significant associations with all diseases mentioned before except neurological illnesses among male physicians.

Furthermore, urological diseases showed strong associations with work-family conflict among men (Table 14).

4.10 Stressors associated with somatic and psychological morbidity: work-family conflict as a significant predictor

To identify stressors of somatic and psychological diseases among physicians, a series of binomial and linear regression analyses were performed. Table 15 and Table 16 list those somatic and psychological diseases where work-family conflict was identified as a significant stressor. As demonstrated in Table 15, work-family conflict was the strongest stressor of other psychiatric/psychological diseases (e.g., suicidal ideation), neurological diseases, depression, urological diseases, hypertension, gastrointestinal diseases, neoplasms, other cardiovascular diseases (e.g., atherosclerosis), anxiety, and gynaecological diseases. For example, one unit increase in perceived work-family conflict would increase the probability of developing depression by almost 4.5 times.

Besides work-family conflict, age emerged as a significant predictor of urological diseases and neoplasms. Male gender also showed a significant predictive relationship with hypertension and neoplasms.

Table 14: Associations between work-family conflict and somatic as well as psychological morbidity among physicians.

Disease/Symptom	All physicians (N=420)			Female physicians (N=219)			Male physicians (N=201)		
	Work-family conflict		t(df)	Work-family conflict		t(df)	Work-family conflict		t(df)
	Mean (SD)			Mean (SD)			Mean (SD)		
	Present	Absent		Present	Absent		Present	Absent	
Myocardial infarction	3.6 (0.8)	2.7 (0.9)	-3.7 (418)***	3.2 (1.6)	2.9 (0.8)	NS ^a	3.6 (0.6)	2.5 (0.8)	-4.7 (199)***
Hypertension	3.2 (0.8)	2.6 (0.8)	-7.2 (418)***	3.4 (0.8)	2.8 (0.8)	-4.2 (217)***	3.1 (0.8)	2.2 (0.7)	-7.9 (199)***
Other cardiovascular diseases	3.4 (0.8)	2.6 (0.8)	-7.6 (418)***	3.7 (0.8)	2.7 (0.8)	-6.8 (217)***	3.1 (0.8)	2.5 (0.9)	-4.0 (199)***
Neoplasms	3.6 (0.88)	2.7 (0.8)	-7.1 (418)***	3.6 (0.9)	2.9 (0.8)	-3.4 (217)***	3.6 (0.8)	2.4 (0.8)	-7.3 (199)***
Depression	3.8 (0.8)	2.7 (0.8)	-7.4 (418)***	3.8 (0.9)	2.8 (0.8)	-4.4 (217)***	4.0 (0.8)	2.5 (0.8)	-6.2 (199)***
Anxiety	2.9 (0.9)	2.6 (0.8)	-3.7 (418)***	3.1 (0.8)	2.7 (0.8)	-3.0 (217)**	2.7 (0.9)	2.4 (0.8)	-2.3 (199)*
High level of emotional exhaustion ^b	3.6 (0.8)	2.5 (0.9)	-12.3 (418)***	3.6 (0.8)	2.7 (0.8)	-7.8 (217)***	3.7 (0.8)	2.4 (0.8)	-9.4 (199)***
High level of depersonalization ^c	3.5 (0.9)	2.7 (0.9)	-7.4 (418)***	3.5 (1.0)	2.9 (0.9)	-3.8 (217)***	3.5 (0.9)	2.4 (0.8)	-7.0 (199)***
Low level of personal accomplishment ^d	3.0 (0.9)	2.7 (0.9)	-3.0 (418)**	3.1 (0.9)	2.9 (0.9)	NS ^a	2.9 (1.0)	2.5 (0.9)	-2.4 (199)*

Disease/Symptom	All physicians (N=420)			Female physicians (N=219)			Male physicians (N=201)		
	Work-family conflict		t(df)	Work-family conflict		t(df)	Work-family conflict		t(df)
	Mean (SD)			Mean (SD)			Mean (SD)		
	Present	Absent		Present	Absent		Present	Absent	
Other psychiatric/psychological diseases	4.2 (0.6)	2.7 (0.9)	-3.7 (418)***	4.0 (0.8)	2.9 (0.8)	-1.9 (217)*	4.4 (0.5)	2.6 (0.9)	-3.4 (199)**
Gastrointestinal diseases (e.g., ulcer)	3.4 (0.7)	2.6 (0.9)	-7.5 (418)***	3.5 (0.7)	2.8 (0.8)	-4.9 (217)***	3.3 (0.8)	2.4 (0.8)	-5.9 (199)***
Gynaecological diseases	-	-	-	3.4 (0.9)	2.7 (0.7)	-5.5 (217)***	-	-	-
Urological diseases	-	-	-	-	-	-	3.4 (0.9)	2.5 (0.8)	-3.7 (19)***
Neurological diseases	3.4 (1.3)	2.8 (0.9)	-2.0 (418)*	3.5 (0.6)	2.9 (0.9)	NS ^a	3.4 (1.8)	2.6 (0.8)	NS ^a

^a NS: Not significant

^b Defined as a score of ≥ 27 on the emotional exhaustion subscale of the MBI.

^c Defined as a score of ≥ 10 on the depersonalization subscale of the MBI.

^d Defined as a score of ≤ 33 on the personal accomplishment subscale of the MBI.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 15: Work-family conflict as a predictor of somatic and psychological morbidity among physicians: binomial logistic regression analyses.

Dependent variable	Independent variable	B	Odds ratio	95% confidence intervals
Other psychiatric/psychological diseases	Work-family conflict	2.32	10.20**	1.88 – 55.41
Neurological diseases	Work-family conflict	1.65	5.19**	1.66 – 16.21
Depression	Work-family conflict	1.49	4.44***	2.33 – 8.45
Urological diseases	Age	0.09	1.09**	1.04 – 1.15
	Work-family conflict	1.29	3.60**	1.57 – 8.29
Hypertension	Gender (male)	1.57	4.80***	2.86 – 8.03
	Work-family conflict	1.00	2.70***	1.77 – 4.12
Gastrointestinal diseases	Work-family conflict	1.00	2.70***	1.75 – 4.18
Neoplasms	Gender (male)	1.0	2.74**	1.37 – 5.52
	Work-family conflict	0.98	2.66***	1.55 – 4.57
	Age	0.06	1.06**	1.2 – 1.10
Other cardiovascular diseases	Work-family conflict	0.85	2.33***	1.51 -3.61
Anxiety	Work-family conflict	0.73	2.10***	1.50 – 3.00
Gynaecological diseases	Work-family conflict	0.65	1.92**	1.22 – 3.04

$p < .05$, ** $p < .01$, *** $p < .001$

4.11 Stressors associated with burnout: work-family conflict as a significant predictor

Stressors of all three burnout dimensions (emotional exhaustion, depersonalization, and personal accomplishment) were explored using stepwise linear regression analyses. Three models for emotional exhaustion, four for depersonalization and two for personal accomplishment have been examined. The models were significant for each step as determined by *F* statistics (data not shown). Of the variables examined (gender, age, job stress, job demands, job control, number of children, average daily work hours, type of employment, and work-family conflict), job demands ($\beta = 0.62$, 95% CI 2.43 – 3.20), work-family conflict ($\beta = 0.16$, 95% CI 0.87 – 2.98) and lack of job control ($\beta = -0.09$, 95% CI -0.39 – -0.07) predicted emotional exhaustion best. Job demands ($\beta = 0.23$, 95% CI 0.21 – 0.72), work-family conflict ($\beta = 0.23$, 95% CI 0.57 – 1.91), male gender ($\beta = -0.13$, 95% CI -2.21 – -0.40), and not working in inpatient/outpatient services or general practice ($\beta = 0.10$, 95% CI 0.21 – 2.65) emerged as best predictors of depersonalization. Low personal accomplishment was best predicted by lack of job control ($\beta = 0.20$, 95% CI 0.18 – 0.52) and not working in inpatient/outpatient services or general practice ($\beta = -0.10$, 95% CI -4.46 – -0.20). These predictors explained around 61%, 19%, and 5% of the variance in emotional exhaustion, depersonalization and low personal accomplishment, respectively (Table 16).

Table 16: Stressors associated with physician burnout (emotional exhaustion, depersonalization and reduced personal accomplishment): stepwise linear regression analyses.

Dependent variables	Independent variables	Standardized β	95% Confidence intervals	t	Adjusted R^2
Emotional exhaustion	Job demands	0.62	2.43 – 3.20	14.27***	0.61
	Work-family conflict	0.16	0.87 – 2.98	3.59***	
	Job control	-0.09	-0.39 – -0.07	-2.93**	
Depersonalization	Job demands	0.23	0.21 – 0.72	3.61***	0.19
	Work-family conflict	0.23	0.57 – 1.91	3.61***	
	Gender (male)	-0.13	-2.21 – -0.40	-2.92**	
	Type of employment (other) ^a	0.10	0.21 – 2.65	2.30**	
Personal accomplishment	Job control	0.20	0.18 – 0.52	4.12***	0.05
	Type of employment (other) ^a	-0.10	-4.46 - -0.20	-2.16*	

^a Other types of employment included establishments for research and medical training, as well as governmental and public health institutions

* $p < .05$, ** $p < .01$, *** $p < .001$

4.12 Significantly lower prevalence of job satisfaction and higher prevalence of job dissatisfaction among female physicians compared with men

As hypothesized, significantly less women than men reported high levels of job satisfaction (a score of 4 and 5 on the job satisfaction scale), however, there was no significant gender difference in the mean (SD) of job satisfaction between female and male physicians (3.5 (0.9) vs. 3.7 (0.7) $t(df)$: 1.56 (418); NS; for female and male physicians, respectively). Similarly, significantly more female physicians experienced high level of job dissatisfaction (a score of 1 or 2 on the job satisfaction scale) compared to men (Table 17). In the whole population, more physicians reported high levels of job satisfaction compared to those who reported moderate or low levels of job satisfaction (a score of 1, 2, or 3 on the job satisfaction scale) (60.2% vs. 39.8%, respectively; data not shown).

Table 17: Gender differences in the prevalence of job satisfaction among female and male physicians.

	Female physicians	Male physicians	Difference test (df)
High level of job satisfaction	121 (55.3)	132 (65.7)	$\chi^2=4.8$ (1)*
<i>N</i> (%)			
High level of job dissatisfaction	28 (12.8)	13 (6.5)	$\chi^2=4.7$ (1)*
<i>N</i> (%)			

* $p < .05$

4.13 Work-family conflict is associated with job satisfaction among physicians

To explore associations between job satisfaction and work-family conflict, independent samples *t*-tests were performed and the difference in the means (SD) of work-family conflict among female and male physicians as well as in the whole sample between those who experience high levels of job satisfaction and those who do not was calculated. Physicians experiencing high levels of job satisfaction (a score of 4 and 5 on the job satisfaction scale) reported significantly lower work-family conflict compared to those with moderate or low levels of job satisfaction (a score of 1, 2, or 3 on the job satisfaction scale) (2.7 (SD 0.9) vs. 2.9 (SD 0.9); $t(df)$: 2.1 (418); $p < .05$, respectively; data not shown). Similar trend in the mean of work-family conflict could be found among female and male physicians between those who scored high on the job satisfaction scale and those who scored low on the job satisfaction scale, however, the difference was not statistically significant (2.9 (SD 0.9) vs. 3.1 (SD 0.8); $t(df)$: 1.9 (217); NS for female physicians, and 2.6 (SD 0.9) vs. 2.7 (SD 0.9); $t(df)$: 0.6 (199); NS for male physicians, respectively; data not shown).

4.14 Stressors associated with job satisfaction: work-family conflict as a significant predictor

To explore stressors of job satisfaction among physicians, four models for female physicians, one for male physicians and two for the whole sample have been examined with stepwise linear regression analyses. The models were significant for each step as determined by *F* statistics (data not shown). Of the variables examined (job demands, job control, job stress, support in the workplace, work-family conflict, average work hours/day, workload, type of employment, gender, age, number of children, emotional exhaustion, depersonalization, and personal accomplishment), work-family conflict ($\beta = -0.21$, 95% CI -0.29 - -0.09) and support in the workplace ($\beta = -0.14$, 95% CI -0.05 - -0.01) predicted job satisfaction best among physicians as a whole. Among female physicians, personal accomplishment ($\beta = 0.14$, 95% CI 0.01 - 0.03), number of children

($\beta = -0.13$, 95% CI $-0.23 - -0.01$), support in the workplace ($\beta = -0.18$, 95% CI $-0.08 - -0.01$), and work-family conflict ($\beta = -0.21$, 95% CI $-0.36 - -0.06$) emerged as best predictors of job satisfaction. Among male physicians, job satisfaction was best predicted by emotional exhaustion ($\beta = -0.14$, 95% CI $-0.02 - -0.01$). These predictors explained around 4%, 7%, and 2% of the variance in job satisfaction among the whole population, female and male physicians, respectively (Table 18).

Table 18: Stressors of job satisfaction among female and male physicians: stepwise linear regression analyses.

Population	Dependent variable	Independent variables	Standardized β	95% Confidence intervals	t	Adjusted R^2
All physicians	Job satisfaction	Constant		4.04 – 5.19	15.76***	0.04
		Work-family conflict	-0.21	-0.29 - -0.09	-3.82***	
		Support in the workplace	-0.14	-0.05 – -0.01	-2.49*	
Female physicians	Job satisfaction	Constant		3.36 – 5.46	8.29***	0.07
		Personal accomplishment	0.14	0.01 – 0.03	2.18*	
		Number of children	-0.13	-0.23 – -0.01	-2.00*	
		Support in the workplace	-0.18	-0.08 – -0.01	-2.48*	
		Work-family conflict	-0.21	-0.36 – -0.06	-2.83**	
Male physicians	Job satisfaction	Constant		3.63 – 3.99	42.63***	0.02
		Emotional exhaustion	-0.14	-0.02 – -0.01	-2.01*	

* $p < .05$, ** $p < .01$, *** $p < .001$

CHAPTER FIVE

DISCUSSION

This research explored the manifestation, direction and type of self-reported work-family conflict, a significant source of stress among a group of scarcely studied female and male physicians in a unique cultural setting with claimed centrality of family as an institution. The research presented in this thesis also assessed provision of social (i.e., parental, spousal, peer, and organizational) support and explored its psychosocial characteristics and relations to work-family conflict among physicians. Furthermore, the study examined the manifestation of physician well-being by assessing the prevalence of job satisfaction and self-reported psychological and somatic morbidity including burnout, and explored their associations with work-family conflict experienced by female and male physicians.

5.1 Manifestation of work-family conflict among physicians

As hypothesized, our results demonstrate significantly higher levels of work-family conflict among female physicians compared to their male counterparts. These findings support those by Duxbury and Higgins (1991) who showed higher levels of work-family conflict among women compared to men. It has been suggested that this may be due to different gender-specific responses to stress (Robinson, 2003). This hypothesis has been based on observed differences in stress symptomatology, i.e., women tend to respond to stress by exhibiting emotional symptoms such as depression and other psychological illnesses whereas men tend to respond by manifesting somatic pathologies, such as cardiovascular diseases (Jick & Mitz, 1985). Based on our qualitative findings, however, we argue that the observed gender differences in the prevalence of work-family conflict among female and men physicians are attributable to differences in socialisation processes, which expose women physicians to more demanding gender role expectations.

Furthermore, the majority (56%) of female physicians in our sample experienced high level of work-family conflict and almost all women (99%) experienced some degree of work-family conflict suggesting a high prevalence of conflicted and unsatisfactory

relationships at home and/or at work. The prevalence of work-family conflict among Hungarian female physicians appears to be one of the highest compared to that reported among female physicians and working parents over the past 25 years, which ranged from 58% to 87% (Nadelson, *et al.*, 1979; Linn, Yager, Cope, & Leake, 1985; Frone, *et al.*, 1992a; O'Driscoll, Ilgen, & Hildreth, 1992; Kinnunen & Mauno, 1998; Warde, *et al.*, 1999). The difference in the reported prevalence rates of work-family conflict among female physicians in Hungary and in other countries may in part be due to differences in study methodology (e.g. different instruments to measure work-family conflict, setting, etc.), or due to the fact that the prevalence of work-family conflict may in fact have increased during the past 25 years owing to progressively less support, resources, time and energy available for the family and to the more demanding nature of professional life (need for continued education, increasing bureaucratic burden, etc.) in Hungary.

Our results also demonstrate important gender-specific differences regarding the direction and type of work-family interference. There are very few studies to date that have explored gender differences in work-family conflict and its potential psychosocial characteristics (Frone, *et al.*, 1992a). Contrary to the results of these studies, our findings appear to confirm the notion that more women than men experience family-to-work conflict (Pleck, 1977). A plausible explanation could be potential cultural differences in societal expectations regarding the centrality of family. However, we found that both female and male physicians reported predominantly work-to-family conflict. These findings are in support of those by Frone, *et al.* (1992b), who showed that the influence of work-to-family conflict was generally greater than *vice versa*. We also identified gender differences in the type of work-family conflict, which showed that female physicians experienced strain-based work-family conflict significantly more frequently whereas men reported mostly time-based work-family interference. These findings are interesting and require further research.

5.2 Potential antecedents to work-family conflict experienced by physicians: lack of support as a stressor

We identified work and non-work-related predictors of work-family conflict experienced by physicians, such as job demands, job strain, high workload, and high number of children. In addition, we found that support in the workplace, i.e., co-worker and supervisor support has shown a significant attenuating effect on work-family conflict among physicians. These findings suggest that the conceptualization of work-family conflict as proposed by Greenhaus and Beutell (1985), and Frone, *et al.* (1992b) is also applicable to physicians in a unique cultural setting. According to this concept, lack of social support functions as an antecedent to or moderator of work-family conflict (Thomas & Ganster, 1995) and differences in the level of support to individuals may lead to different levels of perceived work-family conflict provided there is no change in the number and intensity of stressors.

5.2.1 The psychosocial characteristics of social support

Hence, we further explored the psychosocial characteristics of social support experienced by physicians using qualitative techniques. Our results show significant gender-specific differences in the provision of social support and its relations to work-family conflict among physicians. Whilst our findings suggest a role for spousal, peer, and organizational support in reducing work-family conflict among physicians as a whole, lack of parental, peer (i.e., access to same-sex professional role model or mentor or gender equity) and organizational support appear to be associated with work-family conflict among female physicians.

5.2.1.1 Lack of parental support and female professional role model or mentor

Lack of parental support manifested itself in discouraging female physicians to embark upon a career in medicine and reminding them of the traditional male-female role dichotomy. Such practices may promote antagonism between women's assigned professional self-actualisation and enforced domesticity, which prepares the ground for the development of work-family conflict. An important finding of our study was the lack of female professional role models/mentors identified by a large proportion of female physicians. Professional role models or mentors can help women develop a clear and concentrated professional focus and can provide solutions to problems associated with the harmonisation of the work-family interface. Lack of interaction with and support of female professional role models or mentors may therefore contribute to corroboration of work-family discord.

5.2.1.2 Lack of gender equity

Lack of gender equity (i.e., gender discrimination) has been reported with increasing frequency by female physicians (Carr, Ash, Friedman, Szalacha, Barnett, Palepu, & Moskowitz, 2000). Among our respondents, gender discrimination was strongly felt during medical training and in the evaluation of residency candidates applying in different specialties. Furthermore, implications of gender discrimination in professional advancement during residency and after board certification have also been made. These observations are consistent with findings in other studies, which confirm gender discrimination as a stressor and the negative impact of discrimination on women physicians' and students' professional commitment (Frank, McMurray, Linzer, & Elon, 1999; Yedidia & Bickel, 2001). Our findings that female medical students and physicians in Hungary are exposed to gender discrimination at every level of medical training as well as during their professional life address the need to investigate and change attitudes, behaviours, and traditions within the medical profession in order to

ascertain equity of opportunity and more peer and managerial support for female physicians.

5.2.1.3 Lack of spousal support for women

Furthermore, our findings demonstrate that spousal support with household work (instrumental support) is rare among female physicians suggesting that the division of domestic roles and labour still reflects traditional sex-role stereotyping in the majority of the female physicians' families. Lack of emotional support by the spouse has also been reported by female physicians. This finding merits further investigation as emerging evidence suggests that lack of emotional support may be more important in predicting work-family conflict than instrumental support (Kaufmann & Beehr, 1989), which may explain the lack of associations between work-family conflict and lack of spousal support with household duties in the present research.

5.2.1.4 Lack of organizational support

High proportion of physicians perceived their organization as unsupportive due to the limited provision of family-friendly policies to enable better integration of the professional and domestic domains and consequent reduction of work-family conflict. Mechanisms and policies to alleviate strain and to prevent the development of work-family conflict should therefore be implemented. Such mechanisms should aim at enabling the female physician to increase sources of self-esteem, competency and personal enrichment through promoting social change, recognition, education and empowerment. The introduction of part time employment, retraining programmes or customised work-schedules with minimized odd-hour duty and enhanced flexibility for female physicians might offer affordable solutions to this problem. Further prevention strategies may include the improvement of the person-job fit, elimination of hazards, introduction of growth-oriented settings, such as fitness centres, reduction in role ambiguity, encouragement of participative management, and provision of opportunities

for social interaction. Indeed, recent research by Brough, O'Driscoll, and Kalliath (2005) has confirmed that organizational interventions including family-friendly resources have led to attenuation of work-family interference and to improved psychological outcomes for employees. In addition to enhancing the provision of family-friendly benefits, improving female physicians' perception of a family supportive organization *per se* (e.g., supportive peers and managers) should also be considered as a means of minimizing work-family conflict. Research by Allen (2001) showed that employees who perceived their organization as more family supportive made greater use of available work-family benefits, and experienced less work-family conflict. In the Hungarian context, failure to implement organizational interventions in order to reduce strain has been associated with excess mortality, life and job dissatisfaction, as well as poverty (Andorka & Spéder, 1994; Andorka, 1994; Andorka, 1996), income inequalities and subsequent conflict (Sági, 2002), and social alienation (Andorka, Ferge, & Tóth, 1997).

5.3 Potential consequences of work-family conflict experienced by physicians: adverse impact on physicians' well-being

Work-family conflict, in particular strain-based work-family conflict, experienced by female physicians may have broad individual ramifications including high prevalence of psychological and physical morbidities (Frone, 2000; van Hooff, *et al.*, 2005). In addition, work-family conflict has been associated with poor organizational outcomes such as inadequate patient care (Firth-Cozens, 2001), job dissatisfaction, poor work performance, and absenteeism (Higgins, *et al.*, 1992). In light of these potential adverse individual and organizational outcomes related to work-family conflict as well as our findings about the high prevalence of strain-based work-family conflict among female physicians in Hungary, this research also explored the level of physician well-being, which is of particular importance in the current medical as well as the public health settings in Hungary. In line with our hypotheses, we found high prevalence of psychological and somatic morbidity among physicians in Hungary.

5.3.1 Poor psychological health among Hungarian physicians

Information about the prevalence of psychological morbidity among physicians is limited. Nevertheless, available data suggest that physicians may experience major psychiatric disorders such as depression, or burnout, anxiety, substance abuse disorders, and symptoms of general psychological distress such as sleep disturbance, tiredness, and muscle aches (Firth-Cozens, 2001; Robinson, 2003). For example, a study from the United Kingdom reported high prevalence of psychological morbidity including anxiety (54%) among specialists (Caplan, 1994). In another study, 27% of the respondents scored high (4 points or higher) on the General Health Questionnaire's 12-item version (GHQ-12), suggesting likely psychiatric morbidity (Ramirez, *et al.*, 1996). In line with these results, our findings also show high prevalence of psychological morbidity among physicians in Hungary. In particular, more than 50% of physicians reported anxiety and associated somatic symptoms (e.g., sleep disturbance or tiredness).

A number of studies explored the prevalence of depression among physicians at various stages in their career. The importance of continued empirical research on the prevalence and psychosocial characteristics of depression among physicians is heralded by the fact that according to data 21% to 64% of doctors' admissions to psychiatric hospitals are due to depression. A study by Wachtel, Wilcox, Moulton, Tammaro, and Stein (1995) reported that the prevalence of depression in a sample of physicians was between 3% and 10%. Other studies found a rate of 10% to 20% for depression among doctors (Ford, Mead, Chang, Cooper-Patrick, Wang, & Klag, 1998; Frank & Dingle, 1999). Our results about the prevalence of self-reported depression among physicians (around 8%) are comparable with these findings.

Although gender differences in perceived psychological distress among physicians have been described (Jenkins, *et al.*, 1997), our study showed no significant difference in the prevalence of anxiety or depression among female and male physicians. We originally hypothesized that female physicians would report higher prevalence of perceived distress outcomes (e.g., psychological and somatic morbidity) compared to men due to

higher demands in their roles and consequently higher level of stress (Nazroo, *et al.*, 1998). Although our study did identify a significantly higher level of job strain among female physicians compared to men, contrary to our hypothesis, it has not translated into higher prevalence of psychological diseases (with certain exceptions that are discussed below) reported by female physicians. Lack of gender disparity in the prevalence of anxiety and depression among female and male physicians may in part be due to methodological limitations in the assessment of these diseases (self-report measures and lack of validated instruments such as the GHQ or the Beck Depression Inventory) or to the fact that male physicians may experience additional stressors (other than work-family conflict) that increase the prevalence of stress-related anxiety and depression. Another potential explanation may be that the different forms of work-family conflict (i.e., stress or time based work-to-family or family-to-work conflict) experienced by female and male physicians may have differential impact on the development of psychological and somatic morbidities. These hypotheses would require further research.

According to some studies, depression among physicians appears to be as prevalent as in the general population. For example, in a prospective study in the United States, the lifetime prevalence of self-reported clinical depression among physicians was found to be 12.8%, which is almost the same as that among males aged 45-54 (12%) (Ford, *et al.*, 1998). Another study showed that the lifetime prevalence of self-reported depression among female physicians in the United States was 19.5%, which is comparable to that in the general female population and among female professionals (Frank & Dingle, 1999). Other data, however, show that psychological morbidity is more prevalent among physicians than in the general population (Töyry, *et al.*, 2000). In addition, research by our group also found higher prevalence of depression among male and female physicians compared to other professional groups or the normative population (Györffy, Ádám, & Kopp, 2005a). A recent longitudinal study in Hungary about the prevalence of psychological morbidity and its stressor predictors showed high prevalence of depression among employees. This study identified job strain as a significant predictor of clinical depression in the whole population (Jakab & Lázár, 2007).

Attention to depression is of critical importance as depression has been identified as a major risk factor of suicide among physicians (Silverman, 2000). The suicide rate among physicians is 50% higher than that of the general population (Zabow, 2004). Although suicide incidence rates vary depending on gender and country, female physicians in general have been reported to have an increased relative suicide risk when compared to female professionals. Among physicians as a whole, male physicians appear to be at higher risk of suicide compared to women doctors based on absolute numbers and incidence rates. However, a recent review suggests that the suicide rate of female physicians might be close to that of their male counterparts (Lindeman, Laara, Hakko, & Lonnqvist, 1996).

Our results show that the prevalence of self-reported suicidal ideation (reported as other psychiatric/psychological diseases) among physicians was around 2%. We argue that under-reporting may be accountable for the low prevalence of certain psychological diseases including suicide or substance abuse reported by physicians in our study. This is further supported by our previous research (Győrffy, Ádám, Csoboth, & Kopp, 2005b), which shows high prevalence of suicidal ideation among physicians. This study also found that the prevalence of suicidal ideation among female and male physicians is more than 60% higher than that in the normative population (20.3% and 12.1% for female and male physicians, respectively, vs. 12.3% and 7.6% for females and males in the normative population). Furthermore, the prevalence of suicidal ideation among female physicians was as much as that among male doctors (Győrffy, *et al.*, 2005b).

Although the prevalence of self-reported substance abuse was negligible in our sample (0.5%), evidence suggests that it may be higher among Hungarian physicians than that reported in our current study. According to the data in one of our recent studies, physicians' use of tranquilizers was more prevalent (up to 8%) than that in the normative population (up to 4%) (Ádám, Győrffy, Harmatta, Túry, Kopp, & Szényei, 2008). Substance abuse is an important cause of physician impairment (defined as unfit to perform work due to mental illness or substance misuse), with a lifetime prevalence of about 10% to 15%, and alcohol dependence, which varies from 8% to 15%. The most

common drug of abuse is alcohol, followed by opiates (Broquet & Rockey, 2004). Drug abuse has been shown to be facilitated by self-prescribing (Farber, Gilbert, Aboff, Collier, Weiner, & Boyer, 2005; Hicks, Cox, Espey, Goepfert, Bienstock, Erickson, *et al.*, 2005).

5.3.1.1 Manifestation of physician burnout

In our study, burnout (emotional exhaustion, depersonalization, and low personal accomplishment) emerged as the second most prevalent psychological morbidity reported by physicians. Our findings demonstrate that female physicians experienced significantly higher mean levels of emotional exhaustion compared to male physicians. In addition, significantly more female than male physicians scored high on the emotional exhaustion subscale of the MBI. These results are the first to show high psychological morbidity among Hungarian female physicians in terms of burnout.

There is a growing body of evidence about the increased prevalence of burnout among medical professionals (Ramirez, *et al.*, 1996; Grassi & Magnani, 2000; Shanafelt, *et al.*, 2002; Visser, Smets, Oort, & de Haes, 2003). The comparison of our results with those from studies conducted among medical doctors in different countries shows that the proportion of Hungarian physicians in general (irrespective of specialties and gender) who experience high levels of emotional exhaustion or depersonalization is similar to that of British surgeons but lower than that of Italian or American doctors. Hungarian physicians appear to report low personal accomplishment more frequently than their colleagues in other countries (35% vs. 13-31%, respectively) (Ramirez, *et al.*, 1996; Grassi & Magnani, 2000; Shanafelt, *et al.*, 2002) (Table 19). Although personal accomplishment appears to be less closely related in structural models to emotional exhaustion and depersonalization, which are thought to have a central but not exclusive role in the development of burnout, it may develop independently and in parallel with exhaustion (Leiter, 1993). This may be observed in certain organizational environments characterized by role conflict or work overload that on the one hand intensify emotional exhaustion and on the other hand simultaneously reduce personal accomplishment

through disabling participative decision making and social support, which serve as significant facilitators of personal accomplishment (Maslach, *et al.*, 1996). On the basis of our findings and those by Schaufeli and Janczur (1994) about the high prevalence of low personal accomplishment among medical professionals, it would seem plausible to assign a more central and independent role for the personal accomplishment dimension of the MBI opposite or in addition to the emotional exhaustion and/or depersonalization dimensions in defining burnout levels among physicians in certain societies, like the Hungarian, where participation of women in the work force is significant and the family plays a more central role.

Table 19: Cross-cultural comparison of the prevalence of high levels of burnout among medical professionals.

	High emotional exhaustion score (%)	High depersonalization score (%)	Low personal accomplishment score (%)
Hungarian physicians (2006) N=420	25	17	35
Italian general practitioners (2000) ^a N=182	32	27	13
British surgeons (1993-94) ^b N=161	27	19	32
American general internal medicine residents (2001) ^c N=115	53	64	31

^a Grassi and Magnani, 2000.

^b Ramirez, *et al.*, 1996.

^c Shanafelt, *et al.*, 2002.

Our findings about significant gender differences in self-reported burnout experienced by physicians confirm those that have shown higher emotional exhaustion levels for women and higher levels of depersonalization for men (Maslach, *et al.*, 1996). Similarly, research by Linzer, McMurray, Visser, Oort, Smets, and de Haes, (2002) also revealed gender differences in physician burnout in the United States and identified more work hours and less work control as potential predictors of higher levels of burnout among female physicians in the United States compared to men. Of note, the same research suggested that the lack of gender differences in physician burnout found in the Netherlands might be attributed to higher work control and less work hours among female physicians compared to men. Less work hours seen among Dutch female physicians may be explained by the high proportion of female physicians (75%) working part-time in the Netherlands (Heiligers & Hingstman, 2000). Similarly, the proportion of female physicians working part-time in other Western countries is around 20% to 50% (McMurray, Cohen, Angus, Harding, Gavel, Horvath, Paice, Schmittiel, & Grumbach, 2002). Conversely, our data show that only around 3% of female physicians in Hungary worked part-time. Part-time employment in Hungary among female workers is less than 6% and is the lowest in the European Union. Based upon our results and those of Linzer, *et al.* (2002), it is not unreasonable to suggest that the lack of part-time employment and the significantly higher number of workload, job demands, job stress as well as significantly lower support in the workplace may have contributed to the higher levels of burnout among female physicians in Hungary.

5.4 Poor somatic health among Hungarian physicians

The interrelatedness of physicians' psychological and somatic health has been well established. For example, in a study by Gautam and MacDonald (2001), 30% of physicians receiving psychiatric care were found to have a concomitant chronic somatic disease. Furthermore, physicians suffering from somatic illnesses have been reported to be at higher risk of suicide (Center, Davis, Detre, Ford, Hansbrough, Hendin, *et al.*,

2003). Whilst there is a reasonable body of evidence on physicians' psychological health, limited information is available on their physical health status.

Overall, evidence suggests that physicians' health status is no better than that of other professional groups. On the contrary, data indicate that cardiovascular mortality rates among physicians appear to be higher than that among other professionals (Rimpelä, Nurminen, Pulkkinen, Rimpelä, & Valkonen, 1987). In another study by Töyry, *et al.* (2000), both male and female physicians reported allergic diseases (e.g., chronic eczema, asthma), gastrointestinal diseases, and back complaints more often than other professionals of the same sex. Furthermore, several other studies found that the prevalence of chronic diseases among physicians was around 50% (Chambers, 1992; Davidson & Schattner, 2003).

In our study, the leading causes of somatic morbidity among physicians were hypertension (31.7%), gastrointestinal disorders (20.2%), other cardiovascular disease (e.g., atherosclerosis) (19.3%), allergy (16.0%), gynaecological diseases (15.2%), musculoskeletal diseases (e.g., rheumatism) (13.6%), neoplasms (11.9%), and ophthalmologic diseases (10.7%). These results are comparable with the available evidence reported so far among physicians in other countries. Furthermore, these results appear to confirm the findings in our pilot study about the prevalence of somatic morbidity among physicians in Hungary (Györffy, *et al.*, 2005a). In this study, we found that the prevalence of chronic somatic morbidity among both female and male physicians was significantly higher than that in respective control groups. The prevalence of hypertension, myocardial infarction, cardiovascular diseases, gastrointestinal diseases, neoplasms, diabetes, and renal diseases was higher among male physicians compared to respective control. Female physicians exhibited higher prevalence of hypertension, myocardial infarction, asthma, other pulmonary and cardiovascular diseases, allergies, gastrointestinal diseases, neoplasms, ophthalmologic and gynaecological disorders compared with the normative population.

Among physicians, gender differences in the reported prevalence of somatic diseases have been reported. For example, among Finnish physicians, significantly more male

doctors reported hypertension (14.0%) and diabetes (1.7%) than women (7.8% and 0.7%, respectively) while significantly more female physicians reported thyroid dysfunction (4.5%) and neurological conditions (3.9%) compared to men (1.2% 1.9%, respectively) (Töyry, *et al.*, 2000). In our present study, significantly more male physicians suffered from hypertension (42.8%) and myocardial infarction (7.5%) compared to female physicians (21.5% and 1.4%, respectively). In addition, significantly more female physicians (20.1%) experienced allergy compared to male physicians (11.4%). Our results are in line with other findings that show significantly higher prevalence of hypertension among male physicians compared to women. However, the prevalence of hypertension among Hungarian male and female physicians appears to be around three times higher than that in Finnish physicians.

Our present results also confirm the findings in our pilot study, which demonstrated excess morbidity among male physicians in terms of metabolic (e.g., diabetes) diseases and cardiovascular diseases including hypertension compared to women. The same study also identified allergic diseases as more prevalent among female physicians. In addition, physicians in this pilot study exhibited higher prevalence of somatic morbidity compared to the normative population in Hungary suggesting poor somatic health among female and male physicians (Györffy, *et al.*, 2005a). Based on our findings about the high prevalence of somatic and psychological morbidity among female and male physicians and the lack of consistent gender differences in their prevalence, we argue that one cannot conclude that female physicians' health status is generally worse compared to male physicians. However, our results suggest a distinct and different pattern of somatic and psychological morbidity among female and male physicians, which can be a result of gender specific differences in perceived stress and/or of different gender specific responses to stress (Robinson, 2003).

Increased somatic and psychological morbidity may lead to excess mortality (Kivimäki, Leino-Arjas, Luukkonen, Riihimäki, Vahtera, & Kirjonen, 2002). Indeed, the mortality rate of Hungarian female physicians in the age cohort of 40-59 is around 50% higher compared with that of the age-matched general female population, whose mortality is one of the highest in Europe (Molnár & Mezey, 1991). Based upon our findings about

the high combined prevalence of psychological and somatic morbidity among female physicians, it is not unreasonable to assign a causal role for high morbidity in the development of high mortality among female physicians in Hungary. In particular, the potential role of completed suicide or suicidal ideation as well as the augmentative interactions between somatic and psychological morbidity might be attributed for the excess mortality among female physicians in Hungary. Another potential explanation for the excess mortality among female physicians could be gender differences in health maintenance behaviours. Of concern is that physicians' own health maintenance behaviour is poor and characterised by the well-known triad of 'ignorance, indifference, and carelessness'. For example, they may not recognise psychological problems or they may recognise them but believe that they do not need professional help or they may recognise the problems and realise that treatment is needed but they do not seek help. In addition, physicians have a tendency to diagnose and treat themselves, and if they do seek care they often use informal consultations with colleagues. Although data from this research on the high prevalence of somatic and psychological morbidity and findings from our pilot study (Györffy, *et al.*, 2005a) regarding the health maintenance behaviour of physicians lend some support to the hypotheses of excess mortality among female physicians, further research is required to draw substantive conclusions.

5.5 High prevalence of job dissatisfaction among Hungarian physicians: associations with work-family conflict

Physician satisfaction has been shown to improve the quality of health care and patient compliance. On the other hand, physician dissatisfaction can lead to increased physician turnover and reduced retention, which may adversely impact on the quality and efficiency of health care (Bovier & Perneger, 2003). Physicians have previously been found to have high levels of job satisfaction; however, more recent studies suggest that job satisfaction among physicians is declining (Appleton, House, & Dowell, 1998). For example, a study conducted in the United States showed that job satisfaction of primary care physicians declined substantially over the last 10 years, particularly due to the reduction in the amount of time spent with individual patients, in personal autonomy,

and in time available for family and personal life (Murray, Montgomery, Chang, Rogers, Inui, & Safran, 2001).

In our study, around 40% of physicians reported job dissatisfaction and around 13% reported high levels of job dissatisfaction, which is comparable to data in the literature (Bovier & Perneger, 2003). Earlier studies have suggested that women physicians' career satisfaction is at least as high as, if not higher than, men's. Our results appear to confirm this finding as the levels of job satisfaction among female and male physicians were comparable. This is an interesting finding given that female physicians in our study reported higher level of work-family conflict, a form of strain, which has been associated with lower level of job satisfaction (see below). However, this phenomenon is well-known among social scientists, and termed as the 'paradox of the contented female worker' who, despite having objectively poorer job quality, report equal or greater job satisfaction compared to men (Robinson, 2003). According to this hypothesis, women give more socially desirable responses or have different job expectations or work values from men. Despite the lack of gender difference in the level of self-reported overall job satisfaction among physicians, we found that significantly less female physicians reported high levels of job satisfaction and significantly more female physicians reported high levels of job dissatisfaction compared to men. This is in line with data in the literature, which show gender differences in certain facets or the intensity of job satisfaction between men and women (Kossek & Ozeki, 1998).

In an era of significant reorganization of the health care system and mounting pressures on physicians, understanding the factors associated with physicians' job satisfaction is important for physicians themselves, medical associations, and patients in general. In our study, work-family conflict emerged as a significant predictor of job dissatisfaction among female physicians and in the whole population. In addition, support in the workplace showed a significant protective effect against job dissatisfaction among female physicians and the whole sample.

Our results about the significance of work-family conflict to predict job dissatisfaction confirm those that showed a consistent negative relationship between either of the two

directions of work-family conflict (i.e., family-to-work and work-to-family conflict) and job satisfaction (Kossek & Ozeki, 1998). When considering all three types of work-family conflict (time/strain/behaviour-based conflict), evidence suggests that behaviour-based work-family is the only type of conflict significantly related to job satisfaction (Bruck, Allen, & Spector, 2002). This is particularly important as our study revealed high prevalence of strain-based work-family conflict among female physicians (68%). Taken together, these findings underscore the importance of considering both the direction and type of work-family conflict in the assessment of individual and organizational outcomes such as job satisfaction.

Our results also highlight the associations between burnout and job dissatisfaction. Personal accomplishment among female physicians and lack of emotional exhaustion among male physicians emerged as significant predictors of job satisfaction. These findings are in line with recent data, which showed that lower job satisfaction correlated with emotional exhaustion and better satisfaction with personal accomplishment among a sample of physicians (McNearney, Hunnicutt, Maganti, Rice, 2008). Our findings on the significance of the different burnout dimensions to predict job satisfaction among female and male physicians draw attention to the importance of the personal accomplishment dimension among women to influence important organizational outcomes.

Some recent studies have identified associations between job satisfaction and socio-demographic, occupational as well as organizational factors among physicians such as gender bias, workload, number of children, job stress, and support in the workplace (Bovier & Perneger, 2003; Robinson, 2003). In addition, a recent metaanalysis on the relations between job satisfaction and different health outcomes, job satisfaction has been identified as a significant correlate of psychological health including burnout (Faragher, Cass, Cooper, 2005).

The correlation between job satisfaction and burnout experienced by physicians has been examined from two perspectives: job satisfaction as a cause of burnout and job satisfaction as a consequence of burnout (Shirom, Nirel, & Vinokur, 2006). This

correlation is particularly significant for the aspects of mental health such as burnout, and supports the claim that job dissatisfaction may be particularly damaging to health and well-being of physicians. Our results reaffirmed this claim, and showed that burnout among female and male physicians was a predictor of job dissatisfaction.

5.6 Associations between poor psychological as well as somatic health and work-family conflict

As psychological and somatic diseases have been associated with chronic exposures to stress, gender differences in stress should also play a role in their pathogenesis. Therefore, our research has also focused on exploring associations between stressors predominantly affecting female physicians and psychological as well as somatic ill-health. One such stressor is work-family conflict arising from the difficulties of balancing a multitude of roles at home and at work simultaneously.

This study has explored the health-related consequences of work–family conflict within the context of stress models. According to the theory developed by Greenhaus and Parasuraman (1986), we posited that work–family conflict is a significant stressor that negatively impacts on a variety of somatic and psychological health outcomes (Frone, Russell, & Cooper, 1997, Thomas & Ganster, 1995). Consistent with our hypotheses, our findings suggest significant associations between work-family conflict and somatic as well as psychological morbidity. In particular, the predictive role of work-family conflict in the pathomechanism of burnout, anxiety and depression, neurological and urological diseases, hypertension and cardiovascular diseases, gastrointestinal diseases, neoplasms, and gynaecological diseases should be noted.

Our data confirm the results of very few studies that investigated the relationship between work-family conflict and health outcomes. For example, in one of the scarce longitudinal studies of the effects of work-family conflict, and thus one of the studies that can draw causal relationship between work-family conflict and the examined variables, analyses revealed that work-family conflict was causally linked with elevated

levels of depression and poor physical health, heavy alcohol consumption, and with the incidence of hypertension (Frone, *et al.*, 1997). In another study, work-family conflict was positively related to increased diastolic blood pressure and higher cholesterol levels (Thomas & Ganster, 1995). In the Hungarian context, studies by us and other research groups identified job strain (a correlate of work-family conflict) as a significant stressor of gynaecological and other psychological and somatic diseases in the general population (Jakab, *et al.*, 2006; Jakab & Lázár, 2007; László, *et al.*, 2008). Research by Kinnunen and Mauno (1998) and Netemeyer, *et al.* (1996) found a relationship between increased work-family conflict and increased physical symptoms or somatic complaints. Grandey and Cropanzano (1999) have discovered relationships between work-family conflict and overall physical health. An integrated model of work-family conflict, its stressors and consequences, which also summarizes our findings, is shown in Figure 2 (Korabik, Lero, & Ayman, 2003).

In addition, recent research shows associations between work-family conflict and health-related behaviours. In a study by Allen and Armstrong (2006), work-family conflict was associated with less physical activity and with eating more high fat foods. These findings represent an initial step toward a better understanding of the process linking work-family conflict with somatic health through unfavourable health maintenance behaviour.

5.6.1 Associations between burnout and work-family conflict

In terms of our hypothesis regarding associations of work-family conflict with psychological morbidity, evidence was found that work-family conflict is a strong predictor of the two central dimensions of burnout among female and male physicians, namely emotional exhaustion and depersonalization. The relationship between work-family conflict and burnout experienced by physicians has been explored in a number of studies. Research by Linzer, Visser, Oort, Smets, McMurray and de Haes (2001) suggested that work-home interference had a direct as well as an indirect, mediating effect on burnout. In a study of Dutch medical residents, Geurts, Rutte, and Peeters

(1999) identified work-family interference as a mediator between work characteristics and burnout (i.e., emotional exhaustion and depersonalization). Most recently, research by Montgomery, Panagopolou, and Benos (2006) showed that work-family conflict served as a mediator between job demands and job burnout among doctors in Greece where, similarly to that in Hungary, family as an institution is thought be central to society. Finally, our results are in line with those in a recent study among Hungarian health care professionals, predominantly nurses, which showed significant correlations between role conflict and emotional exhaustion as well as depersonalization (Piko, 2006; for a review on burnout among other professional groups, see Kovács, 2006).

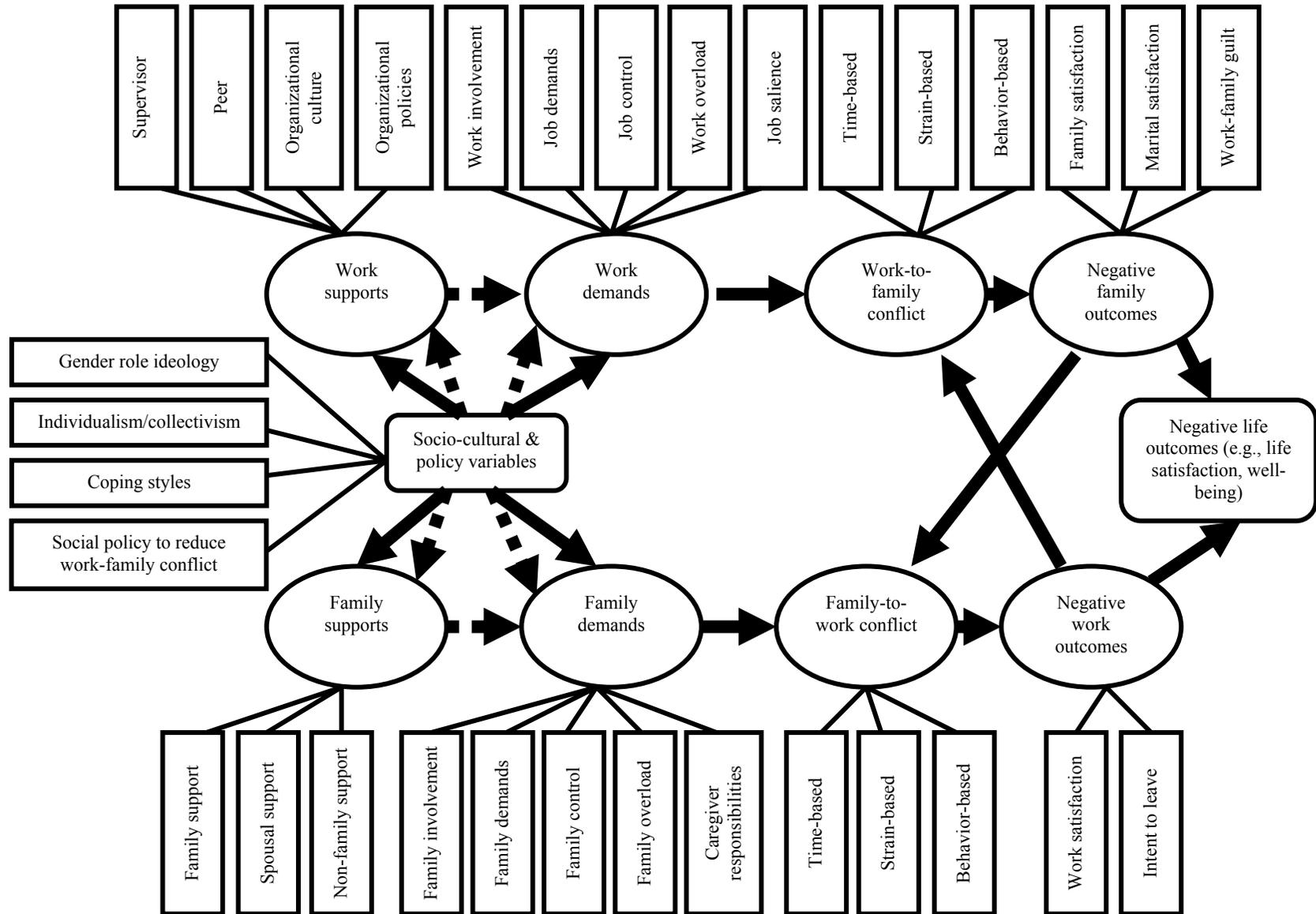


Figure 2: Integrated model of work-family conflict. Solid arrows represent enhancing while dashed arrows represent attenuating relationships between the variables.

Our results indicate that physician burnout, in particular emotional exhaustion, is best predicted by work-family conflict together with other work stressors such as increased job demands and lack of job control. These work stressors are of particular importance in the Hungarian context. The ongoing restructuring of the Hungarian health care system has resulted in loss of job security and in chronic shortage of resources. These changes have led to a sharp increase emotional and quantitative job demands (e.g., workload, time pressures and consequent distress), decrease in decision authority and lower social status for the vast majority of Hungarian physicians. These findings further add to a large body of evidence which identifies work demands and lack of control over one's work schedule and patient load as well as other individual and organizational factors (e.g., ineffective coping mechanisms, lack of adequate resources, dysfunctional patient-doctor relationship) as significant antecedents to burnout (Lee & Ashforth, 1996; Maslach, *et al.*, 1996; Ramirez, *et al.*, 1996; Firth-Cozens, 1997; Schaufeli & Enzmann, 1998; Burke & Greenglass, (2001); Demerouti, Bakker, de Jonge, Janssen, & Schaufeli, 2001; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Linzer, *et al.*, 2002; Posig & Kickul, 2003; Schaufeli & Bakker, 2004). The significance of different practice settings (e.g., working in educational or research establishments) in predicting depersonalization and lower personal accomplishment is an interesting finding in our study and merits further research.

5.7 Limitations of this research

Some limitations of our reserach should be noted including the biases of self-reporting, which raise concerns regarding the possibility of common method variance. However, in order to minimize the risk of common method variance/self-report bias, we used triangulation techniques such as temporal as well as methodological separation of assessment of variables to reduce item ambiguity (i.e., mixture of questionnaire and interview items for the same variable and two rounds of interviews) (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Although we investigated the role of co-worker and supervisor support as an independent variable of work-family conflict, it has also

been identified as a dependent variable. Adams, *et al.* (1996) found that the higher the work-to-family conflict, the lower the emotional and instrumental support from the family. Bidirectional associations between support and the different forms of work-family conflict require further research.

In addition, the relationship between work-family conflict and somatic as well as psychological morbidity including burnout may have been influenced by negative affectivity defined by Watson and Clark (1984) as a stable tendency to express emotions across time and situations. Recent research, however, suggests that negative affectivity does not overly distort relationships between self-report measures of stressors and strains (e.g., Schonfield, 1996; Dollard & Winefield, 1998; de Jonge, Dormann, Janssen, Dollard, Landeweerd, & Nijhuis, 2001). Therefore, we have not assessed negative affectivity in our present research. In addition, causal relationships between the variables cannot be claimed. These issues should be addressed using a robust longitudinal design.

5.8 Strengths of this research

Despite these limitations, our research has important strengths as it extends previous research on work-family conflict in several ways. Firstly, we draw on emerging theoretical models of the effects of culture on work-family conflict (Korabik, *et al.*, 2003; Joplin, Shaffer, Francesco, & Lau, 2003). To our knowledge, this is the first research to date to provide insight into the psychosocial characteristics and prevalence of work-family conflict and to identify lack of parental, peer, and organizational support as gender-specific antecedents to work-family conflict among female physicians in Hungary. In addition, this is the first and only study to explore the manifestation of physician well-being and to investigate predictive relationships between work-family conflict and job satisfaction, somatic as well as psychological morbidity including burnout among physicians in a unique cultural setting from Central and Eastern Europe with claimed centrality of family as an institution. Furthermore, our study provides a base for further explorations by virtue of generating hypotheses and developing research

strategies. This research also provides some justification for advocating urgent preventive measures to minimize work-family conflict, which subsequently may improve the well-being of women in medicine. Our research also contributes to current efforts on establishing national norms for the MBI in cross-cultural burnout research.

5.9 Future directions for empirical research on work-family conflict

5.9.1 Testing new theories

5.9.1.1 The role enhancement theory

As mentioned in section 1.4, the research of work-home conflict is dominated by the role theory (Kahn, *et al.*, 1964; Rizzo, *et al.*, 1970). According to this model, the resources of the individual are limited and multiple roles inevitably reduce the resources available to meet all role demands, thus leading to interrole conflict, and subsequently to strain. Although role theory is valuable in predicting the outcome of interrole conflict, it does not explain why multiple roles can lead to positive outcomes (e.g., increased work efficiency). This finding has given rise to the role enhancement model developed by Marks (1977), which proposes that an individual's supply of energy is abundant and expandable.

5.9.1.2 The spillover theory

A further theory, the spillover theory (Zedeck & Mosier, 1990) conceptualizes the positive and negative interactions between the work and home domains, where time, tasks, stress, emotions and behaviours spill over between the two domains (Greenhaus & Beutell, 1985). Although the role enhancement and spillover theories are valuable in

assessing the outcome of negative and positive interactions, they do not address the question on how individuals deal with conflict.

5.9.1.3 The conservation of resources theory

Hobfoll's (1989) conservation of resources theory attempts to explore this question. This stress theory stipulates that people strive to retain or build resources (e.g., material resources such as house, or clothes, and non-material resources such as energy, self-esteem etc.) and strain develops when they lose or are threatened to lose these resources. According to this theory, an extra role may serve as a resource, which would be beneficial to the individual. This theory provides an answer to the question as to why and how the individual deal with conflict, i.e., following loss of resources (conflict), the individual strives to maintain or preserve resources. One of the shortcomings of this theory, however, is that it focuses on the individual and does not examine interactions between the actors in the event of a conflict.

5.9.1.4 The self-discrepancy theory

A further stress theory, the self-discrepancy theory (Higgins, 1987), postulates that discrepancies among the perceived 'actual self', the 'ideal self' (as imposed by oneself), and the 'expected self' (as imposed by society) result in affective responses such as stress, guilt, and depression. This theory shifts the focus from the social context of adverse outcomes (e.g., stress) to the psychological one. This theory, too, considers only the individual as a unit of measure and does not investigate interactions between the individuals affected in conflict situations.

5.9.1.5 The social identity theory

The social identity theory (Tajfel & Turner, 1986) of conflict moves the focus from the individual role to group identities. According to this theory, individuals have multiple identities based upon the social group they belong to. Individuals may have conflicting identities (e.g., manager and mother), but as long as these identities are separated or the values associated with a particular role are consistently applied to the conflicting roles, no interrole conflict develops and the work-family balance is maintained (Allen *et al.*, 1983). For example, a physician mother with young children who has been on duty three times a week for several months may not experience work-family conflict and strain because her commitment (values) to being a physician maybe more important than her commitment (values) to being a mother.

5.9.1.6 The social exchange theory

An improvement of social identity theory is social exchange theory (Blau, 1964). This theory explains conflict in terms of unreciprocated social exchanges between parties. According to the theory, human relationships are formed by the use of a subjective cost-benefit analysis (i.e. give-and-take approach) and the comparison of alternatives. For example, when a person perceives the costs of relationship as outweighing the perceived benefits, then the theory predicts that the person will choose to leave the relationship. This theory offers a rationale to understand exchanges and interactions between individuals in the social and economical context as well as in the work and in the home domains and it considers interactions between all of the actors involved in an event of work-family conflict.

Despite advancement in the theorizing of work-home conflict described above, there is a paucity of empirical research using these theories as a conceptual framework. Further studies are required to explore the complex relationships among antecedents to and outcomes of work-family conflict.

5.9.2 Level, focus, scope, and methodology of future research

Poelmans (2001) provides a framework for the research of work-home interface that enables researchers to guide their investigations in order to generate further data regarding each of the research aspects described below:

1. Level of research: individual, inter-personal, organizational, societal.
2. Focus of research: theoretical, practical, descriptive, normative
3. Scope of research: local, regional, cross-cultural
4. Methodology of research: cross-sectional, longitudinal, quantitative, and qualitative

Previous research has been dominated by empirical studies focusing on the level of individual as a unit of measure, with a practical and descriptive focus looking at specific stressors and their relationship to work-family conflict. In addition, the majority of studies aimed at exploring work-family conflict locally with a cross-sectional and quantitative design.

Therefore, more empirical studies are required that investigate work-family conflict on the inter-personal, organizational and societal levels, in a regional or cross-cultural context and with longitudinal and qualitative design.

CHAPTER SIX

CONCLUSIONS

This research was designed to test the predictive relationship between social support and work-family conflict, and the substantive relations of work-family conflict to organizational, somatic and psychological manifestations of physician well-being, while also addressing two limitations (i.e., lack of cross-cultural and qualitative research) that are frequently discussed in work-family literature. In conclusion, our results show that the level and prevalence of work-family conflict experienced by female physicians in Hungary is higher than that among male physicians. This gender-specific difference may be associated with aggravating factors such as more demanding female role expectations and strain as well as with lack of attenuating factors such as social support of women, which may be attributable to gender-specific socialisation processes. Furthermore, our findings suggest that work-family conflict as a stressor may function as a predisposing condition for the development of job dissatisfaction and for a number of somatic as well as psychological diseases including burnout, and hence may adversely impact on the well-being of female and male physicians.

CHAPTER SEVEN

SUMMARY

This research explored the level, prevalence, psychosocial characteristics and antecedents of work-family conflict (WFC), as well as its relations to organizational (job satisfaction) and individual (somatic as well as psychological morbidity including burnout) strain outcomes using quantitative and qualitative techniques among physicians ($N=420$) in Hungary. Female physicians ($N=219$) reported significantly higher mean level and prevalence of WFC compared to men ($N=201$). The predominant form of WFC was work-to-family conflict among physicians; however, significantly more female physicians experienced family-to-work conflict and strain-based WFC than men (39% vs. 18% and 68% vs. 20%, respectively). Significantly more male physicians experienced time-based work-family conflict than women. In regression analyses, high job demands, job strain, high workload and number of children, younger age, and lack of support in the workplace predicted WFC best (adjusted R^2 0.59). Content analyses of interview data ($N=123$) revealed significant gender differences in the provision of social (parental, spousal, peer, and organizational) support to physicians. Female physicians lacking parental, peer (i.e., access to same-sex professional role models/mentors, gender equity), or organizational support (i.e., family-friendly policies) experienced significantly higher WFC compared to appropriate control. Significantly less female physicians reported high levels of job satisfaction. Physicians reported poor somatic and psychological health and significant gender differences were identified in the prevalence of certain somatic and psychological diseases. Female physicians scored significantly higher on the emotional exhaustion subscale of the Maslach Burnout Inventory and significantly more female physicians experienced high levels of emotional exhaustion compared to male physicians. WFC emerged as a significant predictor of job dissatisfaction, and somatic as well as psychological morbidity including burnout (emotional exhaustion and depersonalization). These findings suggest that lack of social (parental, peer, and organizational) support may function as an antecedent to WFC experienced by female physicians. Furthermore, these results imply a potential path from WFC to compromised physician well-being (i.e., job dissatisfaction, poor somatic and psychological health including burnout) in a scarcely researched population of physicians and provide further data for cross-cultural occupational stress and burnout research in a unique cultural setting with claimed centrality of the family.

A munkahely-család konfliktus prevalenciája, prediktorai és lehetséges hatása az orvosnők és férfi orvosok egészségi állapotára és életminőségére Magyarországon

Ez a kutatás a munkahely-család konfliktus (MCSK) szintjét, prevalenciáját, pszichoszociális jellemzőit és forrásait, valamint a MCSK és a stressz szervezeti (munkahelyi elégedettség) és individuális (szomatikus és a pszichés morbiditás) következményei közötti kapcsolatot tárta fel kvalitatív és kvantitatív módszerekkel magyar orvosok körében ($N=420$). A MCSK szintje és prevalenciája szignifikánsan magasabb volt orvosnők körében ($N=219$), mint férfiaknál ($N=201$). Az orvosok leggyakrabban munkahely-függő MCSK-ról számoltak be, de szignifikánsan több orvosnő jelentett család-függő MCSK-t és stressz-alapú MCSK-t, mint férfi. (39% vs. 18% és 68% vs. 20%). Szignifikánsan több férfi orvos számolt be idő-alapú MCSK-ról a nőkhöz képest. Regressziós analízisekben a magas munkahelyi követelmények és munkateher, a munkahelyi stressz, a nagy gyerekszám és a munkahelyi támogatás hiánya bizonyultak a MCSK legerősebb prediktorainak (R^2 0.59). Az interjúk tartalmi analízise ($N=123$) szignifikáns nemi különbségeket fedett fel az orvosok társadalmi (szülői, társas, munkatársi és szervezeti) támogatásában. Azok az orvosnők, akik nem részesültek szülői, munkatársi (pl. női példaképek vagy mentorok hiánya, illetve nemi megkülönböztetés) vagy szervezeti támogatásban (pl. családbarát opciók), szignifikánsan magasabb munkahely-család konfliktust jelentettek azokhoz képest, akik részesültek ilyen típusú támogatásban. Az orvosnők körében szignifikánsan alacsonyabb volt a munkahelyi elégedettség prevalenciája, mint férfiorvosoknál. Az orvosok körében a szomatikus és pszichés morbiditás prevalenciája magas volt és szignifikáns nemi különbségeket találtunk bizonyos pszichés és szomatikus betegségek prevalenciájában. Az orvosnők szignifikánsan magasabb szintű emocionális kimerülésről számoltak be, mint a férfiak. A súlyos emocionális kimerülés prevalenciája ugyancsak szignifikánsan magasabb volt orvosnők körében, a férfiakhoz viszonyítva. A MCSK a munkahelyi elégedetlenség és a szomatikus és pszichés megbetegedések – beleértve a kiégés-szindrómát is – szignifikáns prediktorának bizonyult. Eredményeink szerint a társadalmi támogatás hiánya MCSK kialakulásához vezethet, ami negatívan befolyásolhatja a magyar férfi orvosok és orvosnők szomatikus és pszichés egészségi állapotát, munkahelyi elégedettségét és életminőségét. Vizsgálatunk további adatokat

szolgáltatók a foglalkozási stressz és a kiégés kultúrák közötti kutatásához olyan társadalmakban, ahol a család intézménye központi fontosságú.¹⁻³

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