

## **WORK-LOAD, BURNOUT AND MENTAL HEALTH OF DUAL-DOCTOR COUPLES. DEPERSONALIZATION AS A COPING MECHANISM?**

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**Abstract: Background:** In line with the feminization of medicine the rate of dual-doctor couples among physicians has increased. The aim of this study is to describe the impact of the special stress-load related to medical profession on the members of these couples. **Methods:** Data in this representative cross-sectional epidemiological study were obtained from online questionnaires completed by 5,607 Hungarian physicians. In the quantitative analysis data of those who lived in a partner relationship were processed: 1,549 physicians with a physician partner versus 3,095 physicians with a non-physician partner. In our descriptive analysis we compared the amount of work-load (number of working hours, workplaces and night shifts), leisure time, and time spent on housework in the two groups. We also analyzed certain indicators of mental health (sleep disorders, signs of depression, psychosomatic symptoms, and perceived stress) and the presence of burnout and role conflict. **Results:** There was no difference in the amount of work-load between the two groups. No differences were detected in case of mental health indicators either; however, medium and high level of depersonalization and high level of role conflict was more prevalent among doctors with physician partner. Multivariate analysis demonstrated that having a physician partner was an important risk factor of depersonalization. **Conclusions:** Developing depersonalization might be a response on the 'double' emotional burden that affects doctors who live in a dual-career partner relationship. Higher prevalence of burnout among dual-physician couples draws the attention to the need for prevention and intervention.

**Keywords:** *physician-physician couples, work-load, burnout, role conflict, mental health*

## **Introduction**

In the 19<sup>th</sup> century model of the medical profession the attributes of a physician were associated with the image of a responsible, professionally committed man who optimally had a supportive wife in the background [1]. As large numbers of women entered the field of education and work the 'profile' of the profession has changed. Medicine has become increasingly feminized: in the past decades a dynamic rise in the number of female physicians has been witnessed. Among others, there has been a striking increase in the United States, where the rate of female university students was around 10 percent 50 years ago, while more than half of university students are women nowadays [2]. In the past half century a shift of genders can be seen in medicine, too: while in the 1950s and 1960s far more men graduated from medical universities, and in the 1970s and 1980s the number of male and female medical students were similar, on the turn of the 20<sup>th</sup> and the 21<sup>st</sup> century female medical students outnumbered their male counterparts [3,4,5]. Forecasts in the 1990s prognosticated that every third medical doctor would be a woman by 2010; however, it has become clear by now that more than 50 percent of those studying and practicing medicine are women [6,7]. In line with this, the rate of female students exceeds 60 percent at medical universities worldwide [8,9].

As women entered the field of medicine in large numbers, the pattern of the partner relationship of physicians has also changed. In North America and Western Europe doctors' wives were housewives as a rule, but with the increasing number of female physicians the 'dual-earner' and 'dual-career' partner relationship models have become more and more prevalent [7]. In these models the rate of physician-physician couples has also increased [10,11,12]. Nevertheless, it must be noted that the situation in Central-Eastern Europe has been different from the one described above. In the socialist countries labor market was a 'distinguished field' of women's emancipation: men and women were equally important participants of labor market until the 1990s [13]. There have been almost as many female as male physicians in this region since the 1950s [14,15]; therefore, it was not only the 1970s when the number of women physicians started to increase: this trend has already started in the early socialism.

In Hungary, just as in many countries in the region, the opposite of the international trend has been witnessed: medical profession has become less 'isolated' and the rate of physician-physician couples has decreased. While in the 1990s two-fifths of Hungarian doctors had a doctor partner and a further 14% had a spouse working in health care [15], the findings of the representative study of Hungarian physicians in 2013 showed that 38% of respondents had a partner working in the field of health care, which is a decreased rate in comparison with the data obtained from the end of the second Millennium [16].

Relatively few research studies have focused on dual-physician couples. In the beginning of the 1970s Rapaport et al. were the first to describe that dual-manager couples were more likely to face serious difficulties during their effort to reconcile work and family tasks [17]. Based on their findings further studies distinguished dual-earner and dual-career couples. Dual-career means greater commitment and heavier work-load on both members of the couple: in these families women disrupt their working activities less frequently and for shorter periods. The prerequisite of the above described situation is that the traditional division of labor has changed: in line with the masculinization of women's walk of life the 'feminization' of men's walk of life has become inevitable [18]. Beside the extraordinary situation of dual-career couples there has been a further important field of research in the past decades, namely the problematic harmonization of work and family related duties [19,20]. These studies reveal several dimensions when describing the burden on physicians: studies on quality of life, burnout and career options also deal with the issue of possible conflicts between work and family [21,22]. In view of the above mentioned transitions it is of extreme importance to describe how quality of life, stress burden and coping mechanisms of physician-physician couples have changed over time. Due to the special character of medical work dual-physician couples, especially those with small children, are often challenged by difficult situations. Among these are the long and often unpredictable working hours and the difficulties in harmonizing the work-load related to shift work [23,10]. In a study on physician-physician couples' time management it was revealed that among the couples with small children women spent less time with formal professional work while the amount of working hours of their spouses was similar to that of men with non-physician spouses [24,25]. Other studies confirmed that female physicians who had physician partner spent less time with professional work than women whose partner was not a physician [26,27,25,12]. On the other hand, Wang et al. found that having a physician partner decreased the amount of professional working hours in both sexes [28]. Based on these findings, many studies confirmed that physician-physician couples encountered more difficulties in harmonizing work and family related duties than non-physician couples [29,30,26]. Having said all these, the comparison of the mental and physical health status and burnout of members of dual-doctor couples and their colleagues with non-physician partners might be interesting. There are few related studies in the literature: these showed that having a physician partner increased the rate of mental problems of physicians, especially depression and perceived stress [29]. However, qualitative research on physician-physician couples highlighted that physician partners provided each other significantly more emotional and professional support in comparison with non-physician partners of doctors [31,10].

The aims of the present study are to reveal the most important similarities and differences between dual-doctor couples and non-dual doctor couples on a representative sample of Hungarian physicians.

## **Methods**

### ***Study design and data collection***

#### *Online survey of Hungarian physicians*

Our online quantitative survey took place between May 9 and July 15, 2013 and focused on physicians and dentists who worked in Hungary. A link to an anonymous online self-administered questionnaire was sent to all potential participants, followed by four reminder e-mails (sent every two weeks on average). Potential participants were the registered members of the Hungarian Medical Chamber with valid e-mail address ( $n = 42,342$ ). Response rate was 16.18% ( $n = 5,607$ ), which is considered acceptable in comparison with the average response rate of online surveys [32].

Our data were weighted by gender, age and profession (physicians, dentists). After three-dimensional weighting, data regarding the region and type of workplace were compared with the same type of data from the Hungarian Central Statistical Offices. We considered our survey to be representative, because we did not find significant difference according to regions (by counties), nor according to type of workplace (general practice, in-patient and out-patient care).

The survey was performed with the permission of the Hungarian Medical Chamber. Ethical permission was obtained from the Ethical Committee of Semmelweis University, Budapest (No: 60/2013).

#### *Measuring instruments*

The following age groups were applied: 24 to 35, 36 to 45, 46 to 55, 56 to 65 years and older than 65 years. Marital status was coded into a two-category variable as 'living with partner' (married or cohabiting) or 'single' (single, living separately from partner, divorced, or widow) to increase statistical power. Answers to the item regarding the number of children were dichotomized into having or not having children to obtain a proxy measure for parity. The variables of current workplace were categorized into four groups: working in in-patient care; working in out-patient practice; working in a general practice or other (non-governmental organization etc.). We examined the number of weekly working hours (40 or more than 40), and the number of workplaces (one or more than one). We also detected the amount of household related work (hours/week). We examined the amount of weekly shift-work. In case of those who were not single, the partner was coded according to having been a physician or not.

### *Assessment of burnout*

Burnout was measured by the Hungarian version of Maslach Burnout Inventory - Human Services Survey (MBI) [33,34]. The 22-item questionnaire assesses each of the three components of burnout (emotional exhaustion: EE, depersonalization: DP and decreased personal accomplishment: PA) by three different subscales. Responses were rated on a seven-point Likert scale (from 0 = 'never' to 6 = 'every day'). In our study the Cronbach's alpha coefficients for the subscales proved to be 0.909 for EE, 0.767 for DP and 0.818 for PA.

### *Assessment of work vs. family conflict*

Perceived conflict between work and family related duties was assessed by three instruments developed for means of research on physicians' role conflict by Firth, Mellor, Moore, and Loquet [35], and Warde, Allen, and Gelberg [36]. The items were rated on a five-point Likert-scale (from 1 = 'not at all' to 5 = 'very much/extremely often'). The variables of role conflict were dichotomized (1 = never, rarely or sometimes experience role conflict; 2 = often or very often experience role conflict).

The role conflict was measured by the following questions:

"How often do you feel irritated or dissatisfied because of the impression that you cannot balance between your workplace, family, household, or partnership engagements?"

„How often do you experience that family related duties interfere with workplace activities?"

„How often do you feel that workplace engagements disturb family related activities?"

### *Assessment of mental health disorders*

*Sleep disorders* were assessed by the Hungarian version of the shortened Athens Insomnia Scale (AIS) [37,38]. In our sample the Chronbach's alpha value of the Hungarian version of AIS was 0.874.

We assessed *depression* by the shortened version of Beck Depression Inventory (BDI) [39]. In our study the Cronbach's alpha value of BDI was 0.86.

In the survey we used a modified version of the second question of Paykel's „Suicidal ideation and suicide attempts" questionnaire to assess *suicidal thoughts* [40]. The modified question used for the assessment of suicidal thoughts was the following: "Have you ever been preoccupied with suicidal thoughts?". For the classification of the answers (1 = no suicidal thoughts; 2 = suicidal thoughts in the past year; 3 = suicidal thoughts in the past five

years; 4 = suicidal thoughts for more than five years) we used a dichotomous key (1 = no suicidal ideation; 2 = have had suicidal thoughts).

*Psychosomatic symptomatology* was assessed by the Patient Health Questionnaire (PHQ) somatic symptom check-list [41,42]. The symptoms were rated according to severity: 0 = did not occur, or not bothered at all; 1 = it occurred and bothered a little; 2 = it occurred and bothered a lot. Based on the total score obtained, four levels of severity were formed: 0-4 = no symptoms; 5-9 = low severity; 10-14 = medium severity; above 15 = high severity). In this analysis this variable was transformed into a dichotomous variable: the cut-off point was 10. The Cronbach's alpha value of the scale was 0.797.

We assessed *perceived stress* by the shortened Perceived Stress Scale (PSS) [43,44,45], which consists of 10 items and assesses the participants' subjective stress level. We used dichotomous categories: score below the mean value = low perceived stress; score above the mean value = high perceived stress. The Chronbach's alpha value of the scale was 0.812.

### ***Statistical analyses***

Descriptive statistics were used to determine the prevalence of mental health disorders, work-load, burnout and role conflict among Hungarian physicians. Characteristics of 'dual-doctor partners' (DDP) and the 'physician control group' (PCG) were compared by  $\chi^2$  tests. Binary logistic regression analysis was performed to detect the association between socio-demographic and work related variables and burnout. In binary logistic regression analysis we used binary variables of EE, DP and PA as dependent variables, whereas independent variables were gender, age, number of children, type of workplace, working hours/week, number of workplaces, role conflict and having a physician partner.

### **Results**

In the present analysis the rate of respondents with a physician partner (married or cohabiting) was 33.3% ( $n = 1,549$ ). Rate of doctors with non-physician partner (control group) was 66.6% ( $n = 3,095$ ). Most important demographic characteristics of the respondents are shown in *Table 1*.

**Table 1.** Main socio-demographic characteristics of dual-doctor partners (DDP;  $n = 1,549$ ) and the physician control group (PCG;  $n = 3,095$ )

	PCG	DDS
<b>Age (years)</b>	<b>%</b>	<b>%</b>
<35	17.9	18.1
36-45	18.5	17.4
46-55	20.5	21.6
56-65	21.2	23.1
>66	22	19.9
<b>Number of children</b>		
0	21.3	14.8
1	18.9	17.7
2	39.5	44.5
3 or more	20.3	23
<b>Type of workplace</b>		
In-patient care	35.3	39.6
Out-patient care	22.8	20.8
General practice	27.1	23.1
others	14.3	16.9

Among those with physician partners 53.4% were men and 46.6% were women. Reverse rates were found in the control group: 43.1% were men, and 56.9% were women. Mean age of respondents with a physician partner was 52.22 years (SD = 15.38), in case of the control group this number was 52.05 years (SD = 15.28). Almost 10 percent of doctors with non-physician partner divorced previously (9.2%), whereas this rate was 3.3% among those with physician partner ( $p < 0.000$ ). Childless were 14.8% of the index group, 17.7%, 44.5% and 23% had one, two, and three or more children, respectively. These rates among those with non-physician partners are the following: 21.3% were childless, 18.9% had one child, 39.5% had two children, and 20.4% had three or more children. The rate of childless physicians was significantly lower in the index group (14.8% vs. 21.3%;  $p < 0.000$ ).

In the index group 39.6%, 20.8%, and 23.1% worked in in-patient and out-patient units, and as a general practitioner, respectively. In the control group these rates were 35.3%, 22.8%, and 27.1%, respectively. In the index group 14.3%, while in the control group 16.9% worked in other types of workplaces (public administration, civil sector, private practice). Higher rate of doctors with physician partners worked in in-patient units ( $p < 0.003$ ).

Doctors in the index group worked 54.6 hours a week on average, and spent further 14.7 hours on average having been on-duty. They spent 2.2

hours a day on average doing housework. In the control group these numbers were 52.4, 14.2, and 2.3 hours (not significant).

No difference was detected in the number of workplaces either: in the index group 46.4%, whereas in the control group 44.1% had more than one workplace. In the index group more doctors had more than one specializations (45.5% vs. 41.8%, respectively;  $p < 0.001$ )

Our next field of research was development of burnout and the issue of harmonizing work and family related duties (*Table 2* and *Table 3*).

**Table 2.** MBI subscales among doctors with physician partner ( $n = 1549$ )

	EE*	DP**	PA***
	%	%	%
Low level	49.3	56.8	33.9
Moderate level	28	24.8	26.2
High level	22.7	18.4	39.9

\*EE: emotional exhaustion subscale

\*\*DP: depersonalization subscale

\*\*\*PA: personal accomplishment subscale

**Table 3.** MBI subscales in the physician control group ( $n = 3095$ )

	EE*	DP**	PA***
	%	%	%
Low level	51.3	64	34.9
Moderate level	26.6	22.5	26.2
High level	22.1	13.5	38.9

\*EE: emotional exhaustion subscale

\*\*DP: depersonalization subscale

\*\*\*PA: personal accomplishment subscale

We found that moderate and high level of emotional exhaustion was similar in the two groups (50.7% vs. 48.7%, respectively), and the same result was found in case of decreased personal accomplishment (66.1% vs. 65.1%, respectively). The prevalence of moderate and high level of depersonalization was significantly higher among doctors with physician partners (43.2% vs. 36%, respectively;  $p < 0.035$ ).

Among doctors with physician partner 44.6% often or very often found it difficult to harmonize work and family related activities, while this ratio was 41.8% in the control group ( $p < 0.012$ ). Family related duties had significantly interfered with work in 12.1% of the index group and 9.5% in the control group ( $p < 0.000$ ), whereas 45.6% of the index group, and 41.1% in the con-



rol group felt to be significantly distracted from family duties by work ( $p < 0.028$ ). The two groups were similarly affected by sleep disorders according to the AIS: rates of high scores were 41.6% vs. 43.7% in the two groups, respectively. Mild and moderate depression was detected by BDI in 7.7% vs. 7.6%, respectively. Higher levels of psychosomatic symptoms and perceived stress were present in the same rate in the two groups of physicians (21.6% vs. 18.4% and 43.2% vs. 43.5%, respectively; data not shown).

Multivariate analysis was performed to examine the factors that had significant impact on the depersonalization dimension of burnout. Significant difference was found between the index and control groups regarding certain dimensions of role conflict. Nevertheless, we made a methodological restriction, because both the presence and the intensity of role conflict were measured by only one item each. Since this might have had an impact on validity and reliability, our further analysis was restricted to the depersonalization dimension of burnout.

The multivariate analysis demonstrated that beside the traditional risk factors having a physician partner was an important contributor to moderate and high levels of depersonalization (OR = 1.218, CI = 1.0183-1.457, *Table 4*)

**Table 4.** The association between moderate and high level of depersonalization and having a physician partner

Dependent variable	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Depersonalization	1.144 (1.010-1.96)**	1.218 (1.018-1.457)*

\* Adjusted for age, shift-work, gender, number of children, type of workplace, working hours/week, number of workplaces, role conflict and having a physician partner.

\*\*  $p < 0.05$

## Discussion

We examined the work-load, burnout and mental health of Hungarian physicians living in partner relationship by means of a representative survey conducted in 2013. Respondents who had physician partners were compared to doctors with non-physician partners ( $n = 1,549$  vs.  $n = 3,095$ , respectively). In spite of the expectations that were based on the extra difficulties that dual-doctor couples face, our findings showed that they had more children and the rate of previous divorce was lower among them, compared with the control group. In the comparison we found no difference between the two groups according to number of workplaces, hours of night-shifts, and weekly working hours. No difference was found in the amount of leisure time and time spent on doing housework. On the other hand, higher rate of doctors with physician partner than physicians from the control group reported frequent or very frequent role conflicts. Furthermore, we found higher rates of

depersonalization (cynicism) in the index group. No significant difference was found in case of other indicators of mental health and stress burden (sleep disorders, depression, psychosomatic symptoms, and perceived stress) between the two groups of respondents. Multivariate analysis showed that beside the traditional risk factors (amount of working hours, shift-work, having multiple jobs, work-family conflict) having a physician partner was a further risk factor for higher scores obtained at the depersonalization subscale of burnout.

Finding the balance between work and family is crucial in the life of dual-physician couples. According to previous research, when these two fields of life are harmonized, physician-physician couples are in a more advantageous situation both emotionally and professionally [9,46,12]. Almost all studies highlight the importance of time management in the life of double-doctor couples; however, satisfaction with partner relationship greatly depends on how they spend their leisure time. Several studies indicate that it is not the amount but the quality of time spent together that really matters in partner relationship [47,48].

Our survey provides several important new findings in comparison with previous studies. In this Hungarian sample the rate of previous divorce among physician-physician couples was lower compared with their colleagues with non-physician partner (3.3% vs. 9.3%, respectively) or other qualified professionals [49]. According to international data rate of divorce among physicians is between 10-20% which is lower in the general population [50,48]. Additionally, Hungarian dual-physician couples have more children; therefore, it seems plausible that these couples are more 'family-centered'. Presumably, due to the mutual knowledge of each other's profession, members of these couples have deeper understanding toward each other's work-load and commitment. It is possible, that this empathy leads to less unresolved conflicts. A recent research in the US confirmed that rate of divorce among physicians was lower than in the general population. It is interesting, though that higher rate of divorce was found among female doctors than among their male colleagues [51]. On the other hand, almost half of our respondents often encounter difficulties during harmonization of work and family duties. In our previous study we found high level of perfectionism among Hungarian female doctors which had proven to be an important contributor to the development of emotional exhaustion [52]. Therefore, it is plausible that the perfectionist performance both at work and at home leads to more intensive role conflict.

Another unique finding of our study is the difference in level of burnout among physicians with physician partner and doctors with non-physician partner. After controlling for several factors in the dimension of

depersonalization, having a physician partner proved to be an independent risk factor. Depersonalization dimension of burnout manifests through a reserved behavior toward patients, clients and colleagues; furthermore, it means a more impersonal care, cynicism, and lack of emotions [53]. The question is which mechanisms are responsible for the development of depersonalization among the members of dual-physician couples. A doctor faces many difficult, stressful situations during his/her work that might be difficult to cope with. Help from a physician partner can be very useful; however, the emotional burden might be doubled by taking over the problems of the partner. It is conceivable that after some time the members of the physician couples start to keep a distance from these cases to protect themselves, which can lead to depersonalization. This is supported by our result, i.e. in case of physician-physician couples the same level of depersonalization was found among men and women; although, most research outcomes indicate higher prevalence of depersonalization among men [54,55]. It is possible that there is a kind of 'desensitization': the exponential increase in the amount of emotional burden that affects the private life of physician couples may activate mechanisms of self-defense. Thus, keeping distance from problems related to patients and difficult cases becomes more frequent. Nevertheless, further research is needed to explore this issue.

The strength of our study is that we could explore the situation of physician-physician couples based on a representative sample and by using validated instruments. Furthermore, it was possible to include a representative control group of doctors with non-physician partners. The limitation of our study is that we assessed the direction and intensity of role conflict by only one item each. Further research on the development of role conflict among physician-physician couples and its background factors would prove useful.

**Competing interests:** All authors have completed the Unified Competing Interest form at [www.icmje.org/coi\\_disclosure.pdf](http://www.icmje.org/coi_disclosure.pdf) (available on request from the corresponding author) and declare: no support from any organization for the submitted work; no financial relationships with any organizations that might have an interest in the submitted work in the previous three years; no other relationships or activities that could appear to have influenced the submitted work.

**Authors' contributions:** Zsuzsa Györffy participated in data analysis and interpretation, wrote the manuscript, read, and approved the final version. Diána Dweik participated in data interpretation, read, and approved the final version of the manuscript.

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**Abbreviations:** MBI: Maslach Burn-out Inventory; EE: Emotional Exhaustion; DP: Depersonalization; PA: Personal Accomplishment, SD: Standard Deviation; OR: Odd's Ratio; Dual Doctors Partners: DDP; Physicians Control Group: PCG

## **OBIM POSLA, BURNOUT I MENTALNO ZDRAVLJE PARTNERSKIH ODNOSA MEĐU LEKARIMA - DEPERSONALIZACIJA KAO COPING MEHANIZAM?**

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**Uvod:** U skladu sa feminizacijom u medicini, procenat partnerskih odnosa među lekarima je u porastu. Cilj ove studije bio je da se opiše uticaj povišenog stresa povezanog sa medicinskom profesijom među ovim parovima. **Metod:** Podaci u ovoj epidemiološkoj studiji preseka, dobijeni su preko online upitnika popunjenih od strane 5,607 mađarskih lekara. U kvalitativnoj analizi obrađeni su podaci onih koji žive u partnerskom odnosu: 1,549 parova dvaju lekara, prema 3,095 lekara čiji partner nije lekar. U našoj deskriptivnoj analizi, uporedili smo obim posla (broj radnih sati, radno mesto i noćne smene), slobodno vreme, kao i vreme provedeno u kućnim poslovima u ove dve grupe. Takođe, analizirali smo izvesne indikatore mentalnog zdravlja (poremećaji spavanja, znaci depresije, psihosomatski simptomi i doživljeni stres), prisustvo burnout-a i ulogu konflikta. **Rezultati:** Nije bilo razlike u vrednostima obima posla između dve ispitivane grupe. Takođe, nisu otkrivene razlike u indikatorima mentalnog zdravlja; međutim, srednji i visok nivo depersonalizacije, kao i visok nivo uloge konflikta, bili su više izraženi među doktorima čiji su partneri takođe lekari. Multivarijantna analiza pokazala je da partnerski odnos među lekarima značajan faktor rizika za depersonalizaciju. **Zaključak:** Depersonalizacija razvijena u toku burnout-a može biti odgovor na „dvostruko“ emocionalno opterećenje koje utiče na doktore koji žive u dualnim, karijera-partner odnosima. Viša prevalencija burnout-a među parovima dvaju lekara, skreće pažnju na potrebu za prevencijom i intervenisanjem.

**Ključne reči:** *lekar-lekar parovi, obim posla, burnout, uloga konflikta, mentalno zdravlje*

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