

## HEALTH-RELATED QUALITY OF LIFE OF GENERAL PRACTITIONERS – FAMILY PHYSICIANS IN SOUTH-EASTERN EUROPE

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### SUMMARY

**Introduction** An insight into the health-related quality of life (HRQL) provides information on the extent of activities and everyday functioning restriction by deteriorated health.

**Objective** The purpose of the paper was to analyze the HRQL of general practitioners–family physicians of the South-eastern Europe and compare it with HRQL of controls, the subjects of the same educational background, geographical area, sex and age, but different working activities.

**Method** The study “Health-related quality of life of general practitioners–family physicians in the South-eastern Europe” (HERQUL study) was performed in Serbia, Republic of Srpska, Montenegro, Macedonia and Bulgaria during February–September 2004. Study instrument was a standardized generic questionnaire for the measurement of HRQL SF-36, which subject’s health status assesses across eight different domains.

**Results** The study included 1141 doctors (337 male and 804 female) and the same number of controls. The deteriorated physical health affected HRQL of controls, but more significantly of physicians. The deteriorated mental health affected HRQL of both physicians and controls regardless of age and sex. The lowest HRQL scores of physicians due to lowered vitality was reported in all studied countries, excluding subjects from Montenegro. Better social functioning HRQL domain was recorded in males regardless of profession. The deteriorated physical and mental health as well as social functioning mostly influenced HRQL of physicians aged 55–59, and in controls this applied to those older than 60, regardless of sex. Emotional health HRQL domain scores were better in the control group than in physicians, regardless of sex.

**Conclusion** Studies of physicians’ HRQL, particularly doctors of general practitioners–family physicians, are scarce. The results of the HERQUL study could be the impetus to obtain support for the improvement of HRQL of this important group of health professionals from the relevant government institutions.

**Key words:** health-related quality of life; general practitioners – family physicians; South-eastern Europe

### INTRODUCTION

Life-span prolongation has led to the need for a better health-related quality of life (HRQL). Each disease can be studied from numerous aspects (genetics, pathophysiology, diagnostics, treatment, etc.). One of the most current aspects is HRQL, which represents patients’ perception of the influence of disease and corresponding treatment on their physical and working ability, psychological condition, social communication and somatic health [1]. To follow-up a specific disease, i.e. to obtain a good insight into disease control, there should be corresponding follow-up and control outcome. Conventional indicators of the disease (for example symptoms, signs, laboratory, biochemical and functional findings) are very important in the assessment of drug effects on the target organ, however, they do not indicate the patient’ functioning in everyday life and the limit imposed on the patient by the disease. Therefore, the need has emerged to establish new indicators, which would more completely indicate the state of health in relation to the specific disease. In this regard, the concept of the HRQL was developed [2].

Health questionnaires are developed in order to measure HRQL. They represent scientific instruments that

encompass questions and reply options chosen by carefully standardized and established psychometrical methods. There are general or generic health questionnaires and questionnaires for a specific disease or particular status.

There is a great number of generic questionnaires that are applied to assess HRQL, but today the „Gold Standard” is the MOS 36-item Short-Form Health Survey [3]. It is the most frequently used generic questionnaire for the assessment of HRQL, with good psychometric characteristics. It has been developed with the aim to be applied in clinical practice and research in the assessment of the effects of health policy and studies involving the general population to help the development of better screening, diagnostics and treatment of many diseases [3, 4].

### OBJECTIVE

The aim of this cross-sectional study was to assess the HRQL of general practitioners – family physicians (GP/FP) of South-eastern Europe and to make comparison with HRQL of control group subjects from the same region, sex and age, but with different activities at work.

## METHOD

Insight into the HRQL offers information on the degree of activity and everyday functioning limited by disordered health. Based on these reasons, from February 15<sup>th</sup> to September 30<sup>th</sup> 2004, "Health-related quality of life of general practitioners-family physicians in the South-eastern Europe" (HERQUL) study was conducted in 1.141 GP/FP and the same number of subjects of control group in the South-eastern Europe area (Serbia, Republic of Srpska, Montenegro, Macedonia and Bulgaria).

The control group comprised persons of the same region, sex, age and level of education as the subjects included into the basic sample of the study – GP/FP. The control group subjects were chosen directly by GP/FP according to the above mentioned criteria. The subjects of the study and control groups were matched by sex, age ( $\pm 2$  years) and the region of habitation.

As a study instrument, we used the generic questionnaire 36-item short form survey (SF-36), which defines the health status of the studied population by eight different domains: physical functioning, social functioning, limitations in usual role activities due to physical problems (role physical), limitations in usual role activities due to emotional problems (role emotional), mental health, vitality, bodily pain, and general health perception. Moreover, changes in health status over the previous year can be also assessed. Besides recording scores for each subscale, the questionnaire also allows obtaining a composite physical and mental health status scores on the scale from 0 to

100, with higher scores indicating good health status. The SF-36 questionnaire was translated and adopted to all languages and cultures of the participating countries.

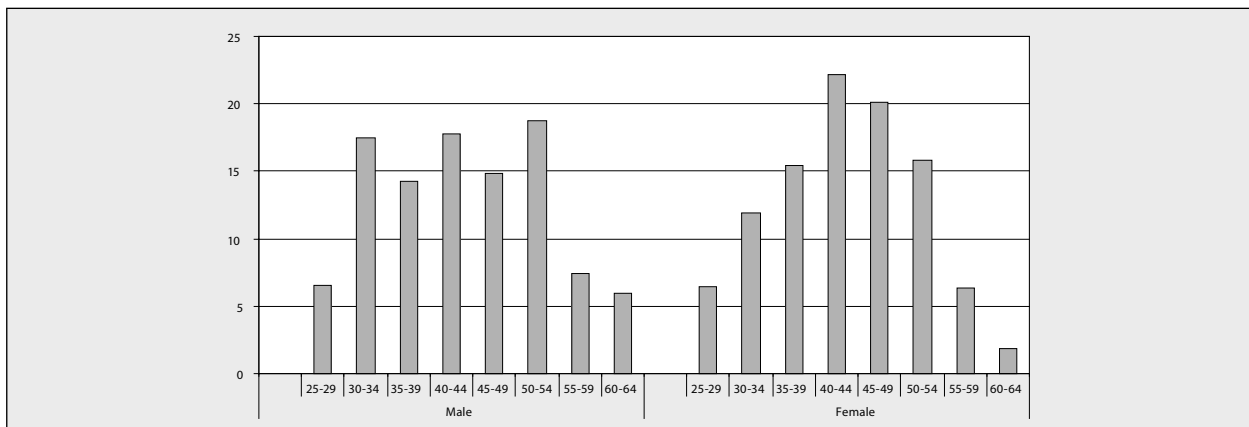
Statistical analysis was done using the standard computer statistical package WinSTAT for Excel. Values were presented as mean values with one standard deviation (SD). Beside descriptive statistics, we used discriminant analysis and Wilcoxon test of equivalent pairs. Probability values of  $p < 0.05$  were regarded as statistically significant and  $p < 0.01$  being statistically highly significant.

## RESULTS

The study involved 337 male and 804 female GP/FP, of mean age  $43.2 \pm 9.6$ . The youngest participant was 25 years old and the oldest one 64 years; 25% subjects were over 50 years old and 75% were over 35 years of age. The distribution of subjects by sex and age is presented on Graph 1. The sample was stratified by age into eight groups: I 25-29, II 30-34, III 35-39, IV 40-44, V 45-49, VI 50-54, VII 55-59, VIII 60-64 years. The oldest physicians, regardless of sex, were least represented.

Table 1 presents the values of all SF-36 scores for both study groups and both sexes, as well as the differences between them.

In this study we analyzed in detail the differences between the GP/FP and the control group in the following HRQL domains: role-physical, mental health, vitality, social functioning and role emotional.



GRAPH 1. Distribution of subjects by sex and age.

TABLE 1. Presentation of SF-36 scores and the significance of their difference between GP/FP and control group.

SF-36 domains	GP/FP		Control group		Z	p
	Male	Female	Male	Female		
Role physical	67.4	65.9	75.2	73.2	-5.506	3.666 E-08
Physical pain	73.8	69.0	78.9	76.9	-8.005	1.110 E-15
Physical functioning	83.872	82.438	86.528	84.571	-4.090	4.306 E-05
Mental health	67.003	62.647	69.994	67.572	-6.291	3.162 E-10
General health perception	62.955	61.049	65.030	63.884	-4.262	2.026 E-05
Vitality	62.226	56.692	66.484	64.795	-9.224	0
Social functioning	70.306	66.896	76.530	73.279	-7.379	1.585 E-13
Role emotional	62.120	63.396	73.499	71.409	-6.356	2.071 E-10

Z – values of Wilcoxon test of equivalent pairs

**Differences in role physical domain between GP/FP and control group**

Better HRQL in relation to impaired physical health was recorded in control subjects group than in physicians (73.78±32.16 : 66.30±37.26), both in males (75.22±31.90 : 67.36±37.44) and females (73.18±32.27 : 65.86±37.21), regardless of age. Physicians' HRQL declined with age, regardless of sex (Graph 2). It is lowest in the age group of 55-59 years (49±16.71: 37.75±10.46). In the control group HRQL in relation to impaired physical health also declined with age, regardless of sex (Graph 3). It was lowest in males aged 60-64 (42.50±19.02) and females aged 55-59 years (57.35±9.46). Lesser HRQL scores due to impaired physical health in physicians, regardless of sex, as compared to the control group, caused concern.

Using the Wilcoxon test of equivalent pairs, we recorded significant differences in the HRQL due to impaired physical health of physicians and control group (Z=5.506; p<0.001). A significantly better HRQL of the control group was recorded in males aged 50-54 years (Z=-2.057; p=0.039), 55-59 years (Z=-2.272; p=0.023), and in females aged 45-49 years (Z=-2.420; p=0.016) and 55-59 years (Z=-2.821; p=0.005). There were also differences among other age groups, but of no statistical significance.

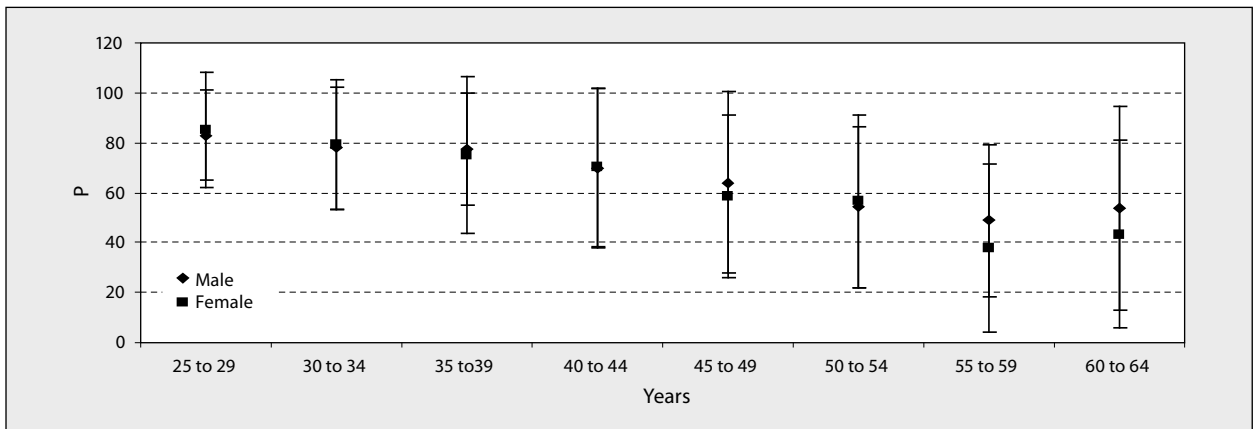
**Differences in mental health domain between GP/FP and control group**

A significantly lower HRQL due to impaired mental health was recorded in the group of female physicians (62.65±20.19). Impaired mental health limits HRQL to the highest degree in female physicians aged 55-59 years (52.47±5.00) (Graph 4). In the control group, the worst scores were found in the oldest women group (56±8.82) (Graph 5). A significantly better HRQL due to impaired mental health was present in the control group of females, regardless of age.

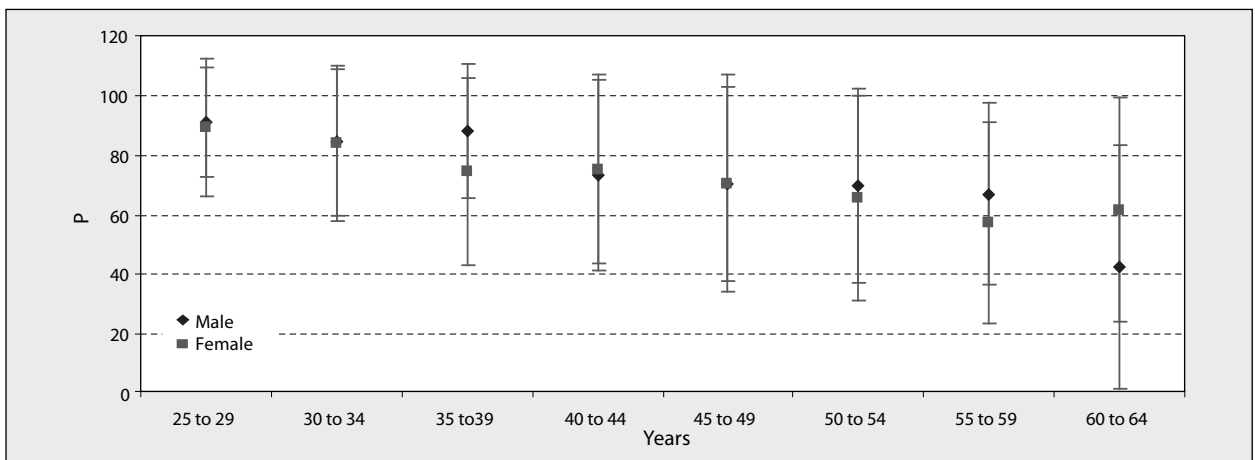
Significant differences in HRQL due to impaired mental health was recorded in the subjects from Macedonia and Bulgaria, with considerably better HRQL in the control group than in the physicians. It is interesting that HRQL was significantly better in the youngest female control group in these countries.

**Differences in vitality domain between GP/FP and control group**

A significantly better HRQL due to lowered vitality was recorded in control females group than in female physicians (64.80±17.03 : 56.69±20.49), regardless of age.



GRAPH 2. Mean values of HRQL role physical domain scores and confidence intervals of physicians – distribution by sex and age.



GRAPH 3. Mean values of HRQL role physical domain scores and confidence intervals of control group subjects – distribution by sex and age.

Poorer HRQL of physicians due to lowered vitality was recorded in all studied countries, except in the subjects of Montenegro.

Particularly endangered HRQL due to lowered vitality was recorded in male physicians aged 45-49 years ( $56.80 \pm 5.57$ ) and female physicians 55-59 years ( $44.41 \pm 5.37$ ) (Graph 6). In the male control group aged 40-44 and 45-49 years, there was also a lower HRQL due to decreased vitality than in the older age subjects (Graph 7).

**Differences in social functioning domain between GP-FP and control group**

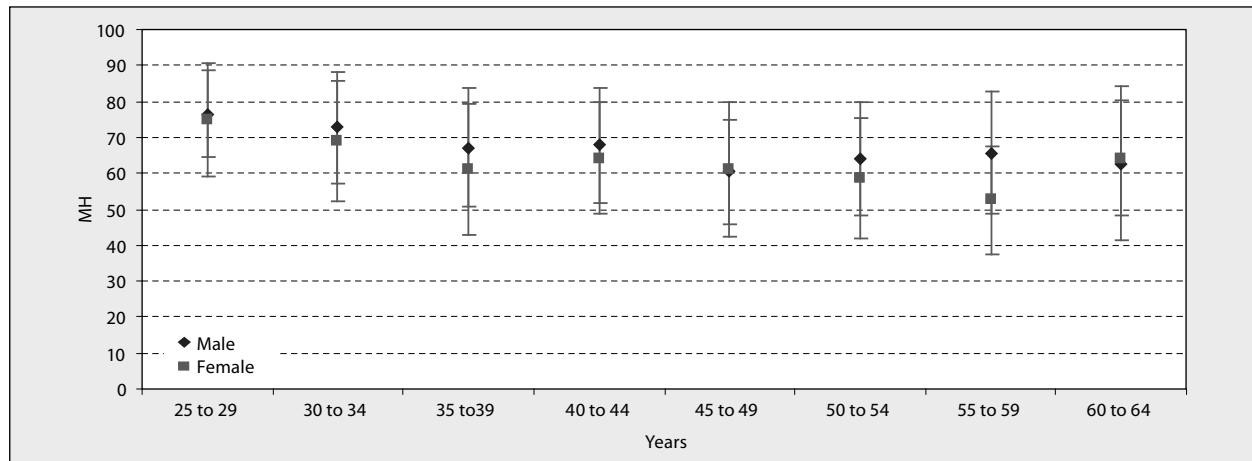
Better scores of social functioning domain were recorded in males than in females, regardless of profession ( $70.31 \pm 22.87$  :  $66.90 \pm 23.82$ ;  $76.53 \pm 20.16$  :  $73.28 \pm 20.64$ ). Regarding the age group, the lowest scores of social functioning domain was recorded in male and female physicians aged 55-59 years ( $62.54 \pm 9.08$  and  $53.82 \pm 6.33$ ) (Graph 8). The worst HRQL in the domain of social functioning, was recorded in the subjects of other professions aged 60-64 years, regardless of sex ( $68.75 \pm 10.82$  and  $58.40 \pm 10.03$ ) (Graph 9). There were significant differences between equivalent pairs in social functioning

recorded in males aged 35-39 years ( $Z = -2.289$ ,  $p = 0.022$ ), females aged 35-39 years ( $Z = -2.358$ ,  $p = 0.018$ ), 50-54 years ( $Z = -4.124$ ,  $p = 3.718 \times 10^{-5}$ ) and aged 55-59 years ( $Z = -2.427$ ,  $p = 0.015$ ).

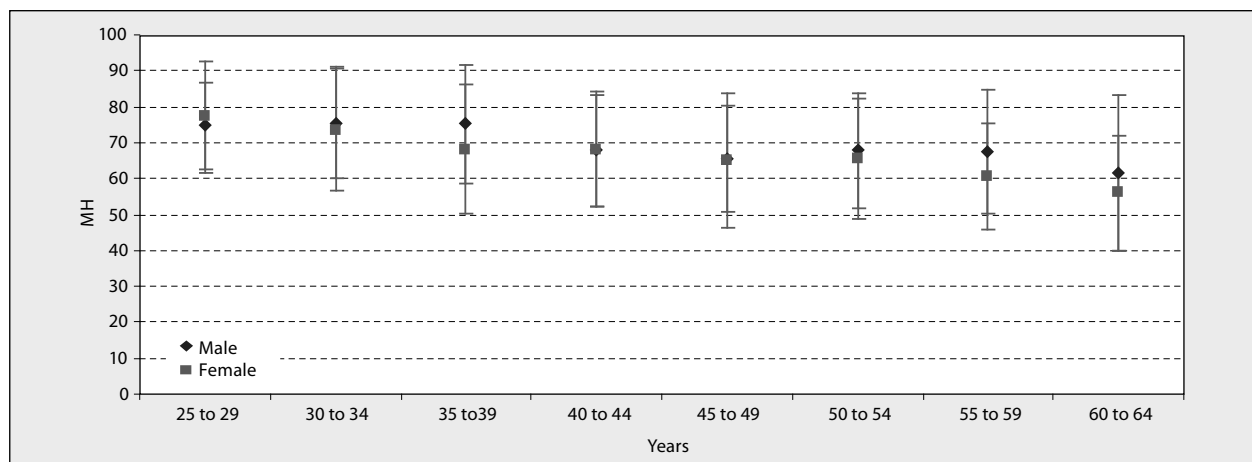
In the Republic of Srpska, Serbia and Montenegro, we did not record significant differences in HRQL social functioning domain scores of physicians and control group. In Bulgaria and Macedonia a significantly better HRQL was recorded in the control group, regardless of sex.

**Differences in role emotional domain between GP/FP and control group**

Better HRQL in role emotional domain was recorded in the control group than in the physicians, both males and females ( $73.50 \pm 33.28$ ;  $71.41 \pm 35.03$  :  $62.12 \pm 40.25$ ;  $63.40 \pm 39.55$ ). In the group of physicians the lowest HRQL in role emotional domain was recorded in the age group of 55-59 years (Graph 10). With increasing age, HRQL in role emotional domain decreased in the control group, regardless of sex (Graph 11). Using the Wilcoxon test of equivalent pairs, in females we found significant differences of HRQL role emotional domain scores in the total sample of physicians and subjects of other professions



GRAPH 4. Mean values of HRQL mental health domain scores and confidence intervals of physicians – distribution by sex and age.



GRAPH 5. Mean values of HRQL mental health domain scores and confidence intervals of control group subjects – distribution by sex and age.

( $Z=-3.421$ ;  $p=0.0006$ ), while according to age significant scores differences were found only in females aged 50-54 years ( $Z=-2.71$ ;  $p=0.007$ ) and males aged 55-59 years ( $Z=-2.243$ ;  $p=0.025$ ).

In Serbia, Montenegro and the Republic of Srpska no significant differences of HRQL were recorded, despite impaired emotional health of physicians and control group, while in Bulgaria and Macedonia there were differences both in mid-aged females (40-44 years) and in females of younger age (30-34 years).

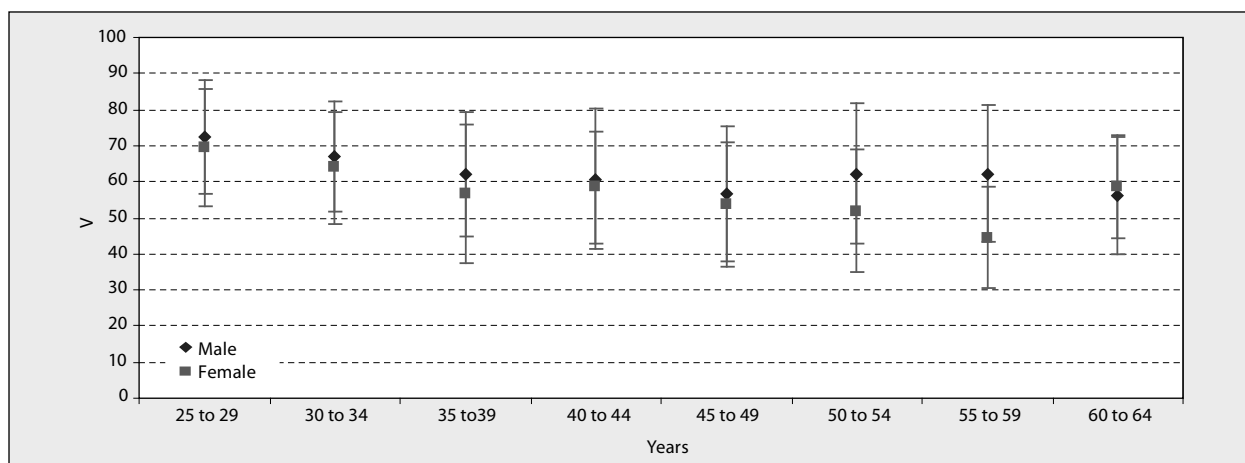
### DISCUSSION

HRQL enables us to understand how the changes in health condition of our study subjects influence their everyday functioning, and whether they limit everyday activities of the subjects. As a subjective parameter, directly placing the subjects into the centre of events – as perceived by themselves, it indicates the degree of their social, emotional and physical functioning, as well as the degree of their mental, physical and social health and well-being. Therefore, we can say that HRQL represents a personal experience of the subject, which is not only the reflection of the subject's feeling of health, but

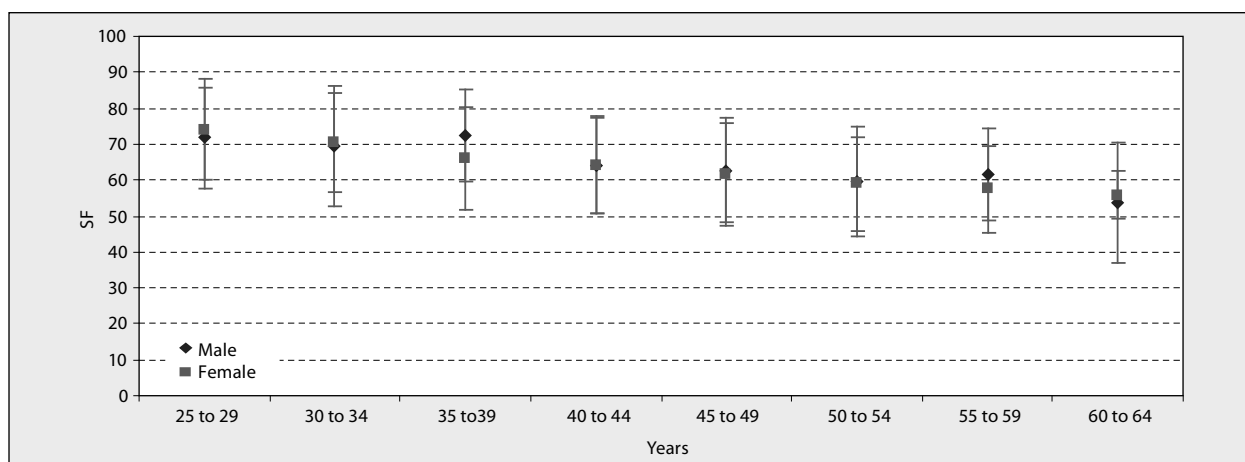
also of other factors and circumstances in life, and of the outcome expressed by the patient himself.

The patient's condition can be assessed by medical professionals and by the patient himself, but the HRQL can be described only by the patient, the way he perceives it, because he can have a direct insight into his own feelings and thoughts. However, the fact should be also kept in mind that the person can feel or function well, which, however, does not necessarily has to be related to his health condition, but could be the consequence of his surrounding [5]. Thus, HRQL should be understood as a special aspect, which is greatly different from classical outcomes, so that the data on the patient's health condition cannot be viewed isolated from clinical manifestations.

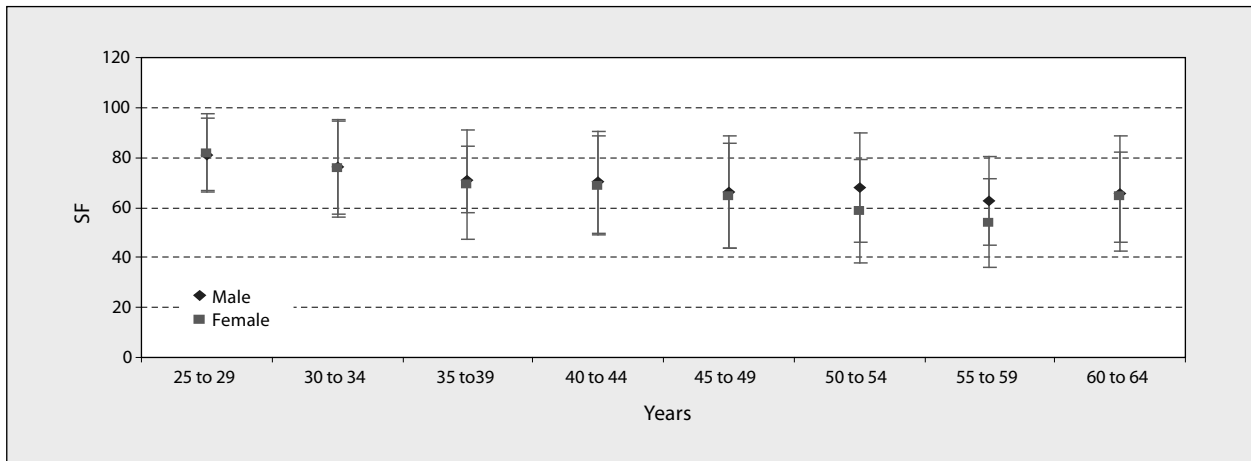
The HERQUL study involved 337 male and 803 female GPs/FPs of the South-eastern Europe and the same number of subjects in control group, with the aim to evaluate HRQL of the South-eastern Europe GPs/FPs, and compare it to the HRQL of the control group. Numerous studies have shown that the prevalence of high-risk behaviour, which contributes to morbidity and mortality of cardiovascular diseases among family doctors in the USA is very high. This is due to low physical activity, the problem of overweight, poor lipid findings, stress at work and irregular check-up of health condition [6]. Such a study



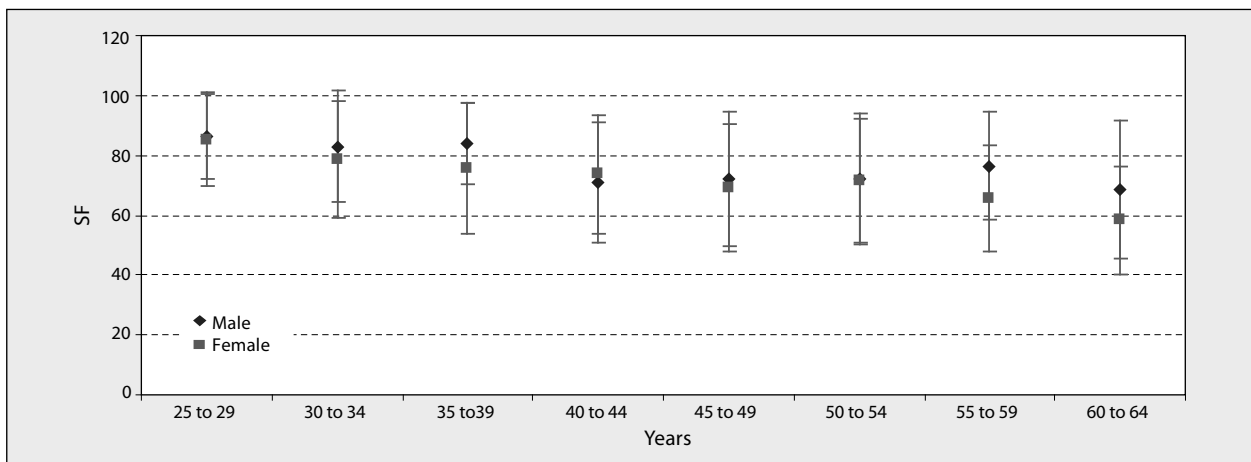
GRAPH 6. Mean values of HRQL vitality domain scores and confidence intervals of physicians – distribution by sex and age.



GRAPH 7. Mean values of HRQL vitality domain scores and confidence intervals of control subjects group subjects – distribution by sex and age.



GRAPH 8. Mean values of HRQL social functioning domain scores and confidence intervals of physicians – distribution by sex and age.



GRAPH 9. Mean values of HRQL social functioning domain scores and confidence intervals of control group subjects – distribution by sex and age.

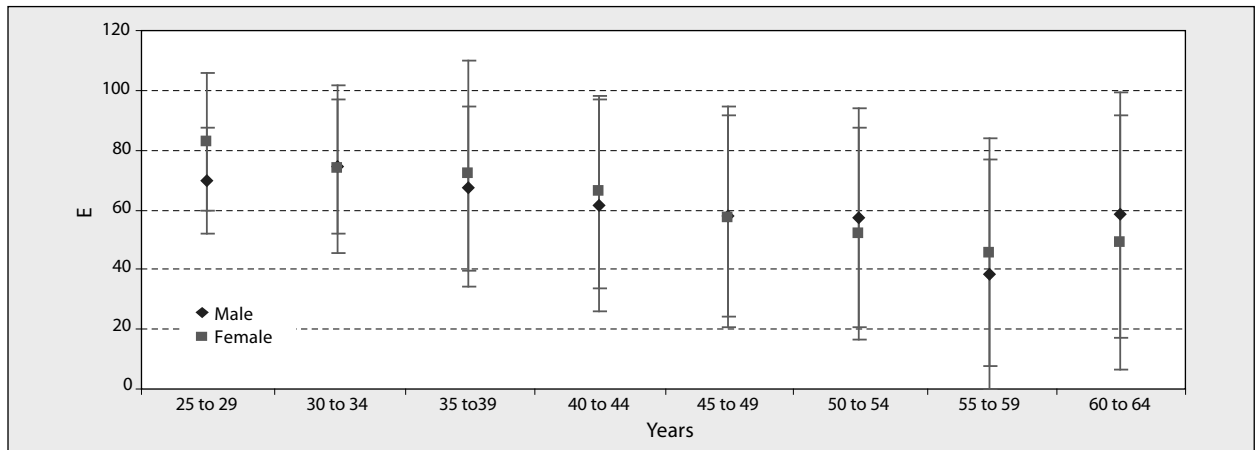
has been performed in the Czech Republic, which shows that smoking, as a risk factor, is present in high percentage among physicians as compared to other countries. A high percentage of physicians have problems with overweight, hypercholesterolemia and hypertension [7]. The results of a study performed by the Section of General Medicine of the Serbian Association of Physicians in Serbia have shown that myocardial infarction in males occurs with increasing frequency below age of 45 years [8], and that at the given moment, the highest risk of the shown odds ratio for the development of myocardial infarction (9.794) and stroke (8.975) is due to smoking [9], which is very widespread among GPs/FPs.

The role of psychological well-being is particularly prominent in general practitioners remaining to work in rural areas, which has greatly drawn attention of government institutions, medical authorities and media. The aim of the Gardiner et al. study [10] has been to evaluate the potential of applying psychological interventions to promote general practitioners to remain working in rural areas of South Australia, thus influencing their well-being. One hundred and eighty seven physicians were asked to fill-in a questionnaire containing questions on the degree of their support in favour of a job in rural

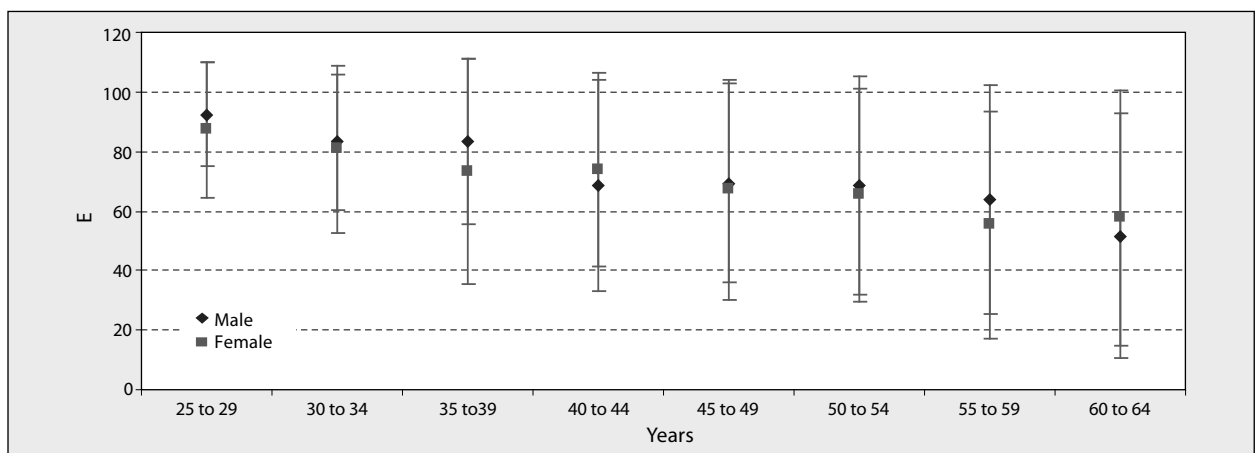
practice, psychological health (morale and stress related to work, stress specifically related to work in rural general practice and quality of professional life) and intention to leave the job in the rural area. The conclusion of this study underlines the significance of psychological interventions (such as cognitive behavioural training) and support given to physicians aimed at lowering stress (by increasing interaction with colleagues) giving them higher motivation to remain working in rural general practice [10].

A study in the USA, which has investigated the HRQL in independent physicians and physicians employed in large medical institutions, shows that independent physicians have longer working hours, work in smaller teams and have working activity of longer duration as compared to physicians employed in medical institutions. The study has shown that the latter physicians have better relations with personnel at work, spend better quality time with their family, have more freedom in bringing decisions at work, are more satisfied with their profession, offer medical service of higher quality and have greater possibilities of achieving their professional goals [11].

In Japan, a study conducted at the national level on the satisfaction of physicians working in rural areas with the



GRAPH 10. Mean values of HRQL role emotional domain scores and confidence intervals of physicians – distribution by sex and age.



GRAPH 11. Mean values of HRQL role emotional domain scores and confidence intervals of control group subjects – distribution by sex and age.

aim to investigate to what degree the physicians working in Japanese rural areas felt satisfied with different aspects of their job and life, as well as to assess their intention to continue their career in the countryside. The study included 4.896 physicians working in national clinics or hospitals. The physicians obtained a questionnaire by mail; they were asked to assess their satisfaction with the conditions of their working place (19 questions) and conditions of life (10 questions). They were also asked about their intentions to continue their practice in the rural area until retirement. Only 27% of physicians wanted to continue their work in the rural area after retirement. It is interesting to note that male physicians showed firmer intention to remain in the rural area. There was a high correlation between the degree of intention to remain in the rural area and several questions, such as interaction with city administrative officials, lowered possibilities of sustaining continual medical education, personal relations and the feeling of fulfilment with job [12].

There are also other examples confirming that the physician's job is stressful. There is an interesting example of young physicians of internal medicine from the USA hospitals, which has shown that their profession is connected with high emotional problems. American system

requires from residents to spend 24 hours at hospital as interns. Therefore, one cannot regard it as working hours in a classical sense, because they are maximally devoted to their profession. A smaller number of these physicians even give up medicine, and suicides have been recorded as well [13].

It is well known that there is a decrease in physicians' satisfaction with profession; however, its influence on physicians and patients has not been fully investigated. Outcome connected with low physicians' satisfaction with profession includes increased number of physicians on shifts/circulation, deteriorating mental health, the condition of emotional exhaustion due to stress at work, „riskier” practice of prescribing medication, more unsatisfied patients, poorer cooperation between the patient and the physician and low compliance with regular taking of prescribed therapy [14].

Patients with severe chronic diseases, who are psychologically vulnerable and prone to strong emotions also influence the inner life of physicians and their worries about the severity of the patient's disease. The physicians can react to the emotions and needs of their patients by showing their own emotions. Such emotions can reflect the physician's need to help the patient, feeling

of frustration in case of progression of the patient's disease, the feeling of helplessness to cope with the disease and its associated losses, sadness, the fear that he/she himself can fall ill or the need to become separated from the patient to avoid it all [15].

Over the recent years, many studies have shown that stress among general practitioners has endemic proportions. By definition, stress presents a physical, emotional and mental effort resulting from bad correlation between the individual and his surroundings, caused by relation among requirements, feeling of responsibility of the individual toward these requirements and ability to fulfil them. Stress often occurs in situations connected with high demands, poor control and limited support or help. Sudden changes at work related to conflicting situations can be the main cause of professional stress.

Stress in general practice is a dynamical process, which changes qualitatively and quantitatively, in dependence of inner and external factors. Anxiety, depression, dependence and burnt-out feelings are often associated with stress [15]. The physician is expected to exert a high level of responsibility, a high level of knowledge and agility in performing a correct and well-timed diagnostic and therapeutic approach, which results in a high level of psychosocial stress.

In Lithuania a study on the degree of psychosocial stress and the degree of responsibility performed on a randomly selected sample of 300 physicians has shown that the highest prevalence of stress is among physicians who are widowers/widows living alone and in female physicians. The lowest prevalence has been noted in older physicians and male physicians. Based on this study, 48% of physicians suffer from psychosocial stress directly caused by their job. The reasons are great responsibility at work combined with restricted freedom in bringing decisions [16].

In Serbia 95% of general practitioners are women. In January 2007 in the Health Centre of New Belgrade a study was performed on the satisfaction of general practitioners with working process and his professional role, using a visual analogue scale ranging from 0 to 10. The average physicians' satisfaction with working process were 6.6 (range 1.7-9.2). All were female subjects. Dissatisfaction was not related to age (mean age was 45.5 years), physician's previous employment duration (mean employment duration was 17.5 years), employment duration as a specialist (mean duration was 9.4 years), mean number of assigned citizens (2.347) and mean number of performed examinations (32.1). The causes of dissatisfaction were short time for the examination of patients (73.3%), great number of patients (53.3%), extensive administration work (63.3%), poor cooperation with consultants-specialist services (40%), slow supportive diagnostics (33.3%) and rare educational opportunities (33.3%) [17].

Dissatisfaction with job and stress among physicians influences the quality of medical service. A study from Pakistan has shown that 68% of physicians are not satisfied with their profession, in the sense of organization and personal relationships at work, as well as with their

salary, all of which represents the main cause of stress at work [18].

Our HERQUL study demonstrated that in Montenegro there was no difference in all HRQL domains between the physicians and control subjects group. In Serbia, a better HRQL was recorded in the control group than among the physicians in the domains of social functioning, vitality and physical pain. In the Republic of Srpska a significantly better HRQL in the vitality domain was recorded in the control group than in the physicians. In Macedonia and Bulgaria better HRQL in all domains was present in the control group than in the physicians.

## CONCLUSION

The fact that the HRQL represents a personal experience of the subject reflecting not only his feeling of health, but also other factors and life circumstances, leads us to the speculation that perhaps the different systems of health insurance and the moment of transition, in which each of these countries at the time when this study was performed, influenced all HRQL domains of physicians. In the available literature from the relevant medical databases, there are no published reports which have directly studied HRQL of physicians, particularly of GPs-FPs. This makes the contribution of HRQUL study even more significant, because it can turn attention of other researchers dealing with this field of medicine to the need of greater effort to investigate this problem based on scientific and methodological manner. Thus, support can be obtained by relevant national institutions to improve the HRQL of this, for each society, significant group of medical professionals.

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## КВАЛИТЕТ ЖИВОТА У ВЕЗИ СА ЗДРАВЉЕМ ЛЕКАРА ОПШТЕ МЕДИЦИНЕ – ПОРОДИЧНЕ МЕДИЦИНЕ ЈУГОИСТОЧНЕ ЕВРОПЕ

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### КРАТАК САДРЖАЈ

**Увод** Увид у квалитет живота у вези са здрављем (енгл. *health-related quality of life – HRQL*) пружа информације о томе колико су активност и свакодневно функционисање испитаника ограничени услед нарушеног здравља.

**Циљ рада** Циљ рада је био да се анализира *HRQL* лекара опште медицине – породичне медицине (ОМ-ПМ) Југоисточне Европе и упореди с *HRQL* испитаника контролне групе, који су на истом нивоу образовања, с истог подручја, истог пола и старости, али с различитим активностима на радном месту.

**Метод рада** „Испитивање квалитета живота у вези са здрављем лекара опште медицине – породичне медицине Југоисточне Европе“ (Студија *HERQUL*) обављено је од фебруара 2004. до септембра 2004. године у Србији, Републици Српској, Црној Гори, Македонији и Бугарској. Као инструмент истраживања коришћен је упитник *SF-36*, стандардизовани генерички упитник за мерење *HRQL*, који здравствено стање испитаника процењује кроз осам различитих области.

**Резултати** Испитивањем је обухваћен 1.141 лекар ОМ-ПМ (337 мушког и 804 женског пола) и исти број испитаника контролне групе. Нарушено физичко здравље је умањило *HRQL* испитаника контролне групе, али значајно више лекара ОМ-ПМ, док је нарушено ментално здравље умањило *HRQL* лекара ОМ-ПМ и испитаника контролне групе, без обзира на

пол и старост. Најнижи скорови *HRQL* лекара ОМ-ПМ због смањене виталности забележени су у свим испитиваним земљама, осим код испитаника из Црне Горе. Бољи скор *HRQL* у области социјалног функционисања забележен је код мушкараца, независно од занимања. Нарушено физичко и ментално здравље, као и социјално функционисање највише су утицали на погоршање *HRQL* лекара ОМ-ПМ старих 55-59 година, односно испитаника контролне групе старијих од 60 година, независно од пола. Бољи скорови у области емоционалног здравља забележени су код испитаника контролне групе него код лекара ОМ-ПМ, независно од пола.

**Закључак** Мали је број студија које су истраживале *HRQL* самих лекара, а посебно лекара ОМ-ПМ. Резултати студије *HERQUL* могу бити подстицај да се од релевантних државних институција добије подршка за побољшање *HRQL* ове, за свако друштво веома важне, групе здравствених професионалаца.

**Кључне речи:** квалитет живота у вези са здрављем; лекари опште медицине – породичне медицине; Југоисточна Европа

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