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PHYSICIAN HEALTH CHALLENGES AND RETURN TO WORK - INSIGHTS FROM A RESEARCH FOR PHYSICIANS BY PHYSICIANS

POREMEĆAJI ZDRAVLJA I POVRATAK NA POSAO OBOLELIH LEKARA – UVID IZ
ISTRAŽIVANJA LEKARA ZA LEKARE

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Summary

Introduction. High rates of burnout, suicide and hypertension complications among physicians suggest an occupational etiology. Generic assessments of the work environment are insufficient. We examine how physicians' "participatory action research" with appropriate theoretical underpinnings provides insights. **Work Stressor Models with Instruments Created "for Physicians by Physicians"**. Specific instruments based on the Job Demands-Resources model were developed by radiologists and psychosocial oncologists, aimed at ameliorating burnout. Increasing perceived value of work, frank discussions and communication between senior and junior colleagues were key. The physician-specific Occupational Stressor Index based on an additive burden model informed by cognitive ergonomics was also developed by physicians. Total occupational stressor burden was high among physicians with cardiovascular disease. Long workhours, speed-up and job loss threat were associated with case status. Anesthesiologists and surgeons had the highest stressor burden, with nightshift work targeted for lowering risk. Associations between job stressors and cardiovascular risk were strongest among female physicians. **Return to Healthier Work.** Intervention studies on return-to-work regarding burnout, cardiovascular disease or malignancy are sparse among physicians. Reduced workhours and paid "protected" time to discuss shared experience may be helpful. Clinical experience suggests that the physician-specific Occupational Stressor Index facilitates return to healthier work. **Conclusions.** Occupation-specific instruments developed "for physicians by physicians" based on work stressor models can improve physicians' work conditions and health. Finding the best strategies for return-to-work among physicians with stress-related disorders remains a challenge. Modified work conditions can yield positive results. Return to *healthier* work enhances physician empowerment and often improves general work climate.

Key words: Return to Work; Physicians; Occupational Stress; Burnout; Professional; Workload; Health Behavior; Stress, Psychological; Cardiovascular Diseases; Neoplasms

Sažetak

Uvod. Visoke stope obolevanja do sindroma izgaranja, komplikacija arterijske hipertenzije i samoubistava među lekarima ukazuju na značaj profesionalne etiologije. Uopštena procena uslova rada nije dovoljna. Zato ukazujemo na to kako sami lekari, teorijski opravdanim postupcima, doprinose rasvetljavanju ove problematike. **Modeli procene profesionalnih stresora metodama koje su kreirali lekari za lekare.** Instrumenti bazirani na modelu *Zahtevi i resursi posla* (engl. *Job Demands-Resources model*) razvili su radiolozi i onkolozi, kako bi smanjili sindrom izgaranja. Ključni faktori su uvažavanje uloženog rada i iskrena, dobronamerna komunikacija starijih kolega sa mlađim. Indeks profesionalnih stresora specifičan za lekare, zasnovan na modelu ukupnog opterećenja, procenjenog kognitivnom ergonomijom, takođe su razvili lekari. Ukupan indeks opterećenja stresorima radnog mesta visok je kod lekara sa kardiovaskularnim oboljenjima. Dugo radno vreme, ubrzavanje rada i pretnja gubitkom posla su prisutniji kod obolelih. Anesteziolozi i hirurzi imaju najveće opterećenje, uz potrebu za intervencijom na smanjenju noćnog rada radi snižavanja rizika do obolevanja. Povezanost profesionalnih stresora i kardiovaskularnog rizika je značajnija kod žena lekara. **Povratak na zdravije radno mesto.** Vrlo retke su interventne studije povratka na radno mesto obolelih lekara od sindroma izgaranja, kardiovaskularnih ili malignih oboljenja. Skraćivanje radnog vremena i diskusija o problemima na radu mogu biti korisni. Klinička iskustva ukazuju da *Indeks profesionalnih stresora* za lekare pomaže povratku na zdravije radno mesto. **Zaključak.** Specifični instrumenti koje su razvili lekari za lekare, zasnovani na modelima profesionalnih stresora, mogu poboljšati uslove rada i zdravlje lekara. Nalaženje najbolje strategije povratka na posao za obolele lekare ostaje i dalje izazov. Poboljšanje uslova rada daje pozitivne rezultate. Povratak na zdravije radno mesto osnažuje lekare i često popravlja radnu klimu.

Ključne reči: povratak na posao; lekari; okupacioni stresori; profesionalno izgaranje; radno opterećenje; zdravlje; psihički stres; kardiovaskularna oboljenja; maligne bolesti

Abbreviations

BMI	– body mass index
OSI	– occupational stress index
CVD	– cardiovascular disease
RTW	– return to work
IHD	– ischemic heart disease
TAV	– threat avoidance vigilance
JD-R	– job demands-resources

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Introduction

Completing long, difficult training prior to entering paid working life entails a rigorous selection process for physicians. This reflects a super "healthy worker effect" [1]. It is anticipated that disease incidence and prevalence will be lower among physicians compared to other working populations. In other words, to effectively handle difficulties, physicians are selected to be physically and mentally healthy. Moreover, physicians are cognizant of behavioral and other factors that affect health. The consistent findings of high rates of burnout, depression and suicide among physicians [2, 3] suggest that harmful working conditions are causative. In physician-specific publications, various work stressors have been implicated [4-6]. Job stressors among physicians are also implicated in the progression from hypertension to ischemic heart disease (IHD). In our 7-year longitudinal study [7], once physicians developed hypertension, their risk of cerebrovascular or cardiovascular complications was significantly greater than among employees not directly providing patient care. However, generic work stressor models have often failed to explain why physicians are at-risk for mental health disorders and progression of hypertension to IHD. The Job Strain Model, e.g., categorizes physicians' work as "active" (high demands and high decision-making latitude) and thus expected to engender salutogenic ways of coping and mental health, as well as lower IHD risk [8].

Clarification requires appropriate methodologies for assessing work stressors, especially to identify potentially modifiable factors in the physician's work environment. Occupation-specific instruments are needed. When persons from the occupation are involved, this can become "participatory action research" [9], with deeper insights gleaned about the actual work situation and motivation strongest to improve it. A proactive role is thereby suggested for physicians regarding our own work environment [10]. As we now review, physician-specific instruments

based on two work stressor models have been developed "for physicians by physicians".

Work Stressor Models with Instruments Created "for Physicians by Physicians"

The Job Demands-Resources Model tailored to Physician-Specialist Groups

Burnout is defined as a syndrome of chronic exhaustion, with a negative attitude and diminished efficacy at work [11]. Burnout reportedly occurs when job demands surpass job resources [12]. According to the Job Demands-Resources (JD-R) model, role conflict and ambiguity, job insecurity and work overload are demands; resources include social support, feedback, coaching and autonomy. The JD-R model has been applied to many work endeavors, including the health care sector, and can be tailored to specific occupations [13].

Radiologists developed a specific JD-R based instrument for colleagues in training, with 19 items related to demands and resources in the radiology residency environment [14]. Emphasis was placed on personal accomplishment which was poor among these specialists-in-training. Based on their findings, the following recommendations were made as to how to ameliorate burnout among radiology residents:

- Provide feedback mechanisms to foster resident personal growth and development;
- Facilitate educational and social forums for residents themselves, aimed at promoting rapport with frank discussions of problems;
- Promote interdisciplinary learning opportunities, encouraging senior colleagues to share their clinical and research experience, and emphasizing the importance of radiology residents' work.

A study applying the JD-R among psychosocial oncologists [15] included an additional dimension of emotional demands [16] that were considered especially relevant to this problem area. Perceived value and work engagement were found to be protective against burnout, while high job demands plus overcommitment were associated with increased burnout risk among this profile of health-care providers.

The Physician-Specific Occupational Stressor Index, OSI

The Occupational Stressor Index (OSI) [17-19], an additive burden model informed by cognitive ergonomics and brain research, assesses mobilization and allocation of mental resources, and how these are controlled by the individual. The total job stressor load is gauged by the OSI, which also analyzes the nature of that burden, considering task and organizational level factors, physical/chemical exposures, and work scheduling, *inter alia*. The OSI considers the work environment in its entirety, akin to taking a full oc-

cupational history. It also provides quantitative/normative data. Less apparent stressors are identified, including threat avoidant vigilance (TAV). Facing potentially harmful consequences contributes greatly to the stressor burden [20] with the nervous system selectively attending to threatening stimuli [21]. Having to follow such information, responding quickly, with errors/delays having serious, even fatal consequences: this is TAV [22, 23]. The OSI includes TAV, but most other job stressor models do not and thus underestimate the stressor burden of physicians as well as nurses, airline pilots, professional drivers, police and firefighters, *inter alia* [18]. The OSI is a two-dimensional matrix: the rows are levels of information transmission, as per Welford [24]. The 1st two levels (sensory input and decision-making) are frequently “invisible” and often missed, whereas reports of “working fast” mainly reflect the task performance level. A 4th general level includes elements related to the overall work environment and is critical for identifying modifiable stressors. The columns are 7 stressor aspects (underload, high demand, strictness, external time pressure, aversive physical exposures, TAV and conflict/uncertainty). Each element is weighted equally, scored from 0 (not present) to 2 (strongly present). The total OSI score is the summation of these factors. [10, 19]. Several occupation-specific OSI instruments have been developed, all compatible within the same theoretical and numerical framework [1]. Questions about the fixed characteristics of a given line of work are omitted, to focus on variable features, especially modifiable stressors.

The physician-specific OSI was developed by us physicians, motivated to improve our work environment and health [18, 25]. The first larger-scale study using the physician-specific OSI focused on cardiovascular disease (CVD) risk [26] and was carried out in Novi Sad, Serbia, an area known for a heavy burden of CVD and its risk factors [27]. Notably, lifestyle-related risk factors were highly prevalent among the Novi Sad physicians. Over 25% had a body mass index (BMI) > 28, over 30% were current smokers, almost 20% consumed alcohol daily, and fewer than 30% regularly engaged in recreational physical activity [26]. This case-control study included 101 physicians with one or more acquired, i.e. stress-related, cardiovascular disorders: myocardial infarction, angina pectoris, arterial hypertension, and certain arrhythmias [28]. The 107 referent physicians had not been diagnosed with any of these disorders. The total OSI scores were significantly greater among cases, with high demands and TAV most notably higher. Three modifiable stressors: long work hours, speed-up and threat of job loss were significantly associ-

ated with case status [26]. An OSI-based study among Novi Sad physicians examined the occupational concomitants of a favorable lifestyle-related profile (normal BMI, non-smoker, regular recreational physical activity and minimal alcohol consumption) [29], with stratified analysis for two groups. One included anesthesiologists and surgeons, reportedly at particularly elevated risk for burnout and suicide, with long work hours and frequent night call implicated [30, 31]. Compared to other physicians profiles, surgeons and anesthesiologists had significantly higher total OSI scores and fewer modifiable stressors. Nightshift work was significantly associated with life-style related profile: anesthesiologists and surgeons with lower nightshift work scores were more likely to have normal BMI, be non-smokers, not daily alcohol consumers with regular recreational physical activity. Thus, nightshift work was suggested for interventions aimed at lowering risk among anesthesiologists and surgeons [29]. For other physicians, the favorable profile was associated with a lower total OSI score. Thus, broader intervention strategies were possible, targeting the work environment together with risk behaviors.

The relation between job stressors evaluated by the OSI and stress-related CVD was most evident among female physicians [29, 32-34]. An OSI high demand score above the mean was associated with over 3-times greater hypertension risk, accounting for BMI as a covariate [34]. The female physicians with a favorable risk profile, defined in that study [34] as not a current smoker and no diagnosed hypertension, had significantly lower total OSI scores. Fewer interruptions from people, less often listening to emotionally-disturbing occurrences, and lower TAV scores were significantly more often found among those who were non-smokers and normotensive. The association between work conditions and lifestyle-related profile was most apparent among female physicians. Significant multivariate relations with these lifestyle factors were reported for total OSI scores, several OSI aspects, especially TAV and some OSI elements (insufficient help with clinical difficulties, supervisory duties, technical problems hampering patient care and long work hours) [29, 32].

Given the increased risk of stress-related disorders among physicians, issues of sick leave and return to work (RTW) become salient. We now examine how improvements in work conditions could impact on RTW among our colleagues, and more broadly among working populations.

Return To Healthier Work for Those Afflicted With Stress-Related and Other Disorders: Sparse Data among Physicians

Return to work, RTW, is vital to quality of life after illness, often critical for maintaining

¹ Use of the OSI instruments is provided free of charge with permission from the first author, the originator of the OSI [17].

economic and emotional stability. The question is: to what type of work is the patient returning—to a healthy job, or to one that adds yet another burden?

Burnout and Related Mental Health Disorders

Mental health disorders are among the leading causes of long-term disability [35, 36] with RTW very challenging for psychiatric disorders. Employees who develop mental health problems are likely to conceal these from employers. Physicians appear to be especially reluctant to seek care for mental health conditions due to fear of revocation of their medical license [37]. Notwithstanding many programs for RTW among those with mental health disorders, the evidence concerning their effectiveness is limited [38]. For physicians in training, concerns about confidentiality, overburdening colleagues and career trajectory impact on RTW. It is noted that more research is needed regarding RTW for physicians with mental health disorders [39]. Despite their high risk, there are few intervention studies regarding RTW for physicians with burnout. A Norwegian study indicates that professional counseling plus reduced work hours helped ameliorate burnout [40]. It was suggested that recognizing their heavy cognitive load would help design strategies to reduce physician burnout [3]. A randomized clinical trial over 19 weeks was implemented among U.S. physicians offering paid “protected” time for discussion of shared experience, and small-group learning, reflection and mindfulness. Rates of depersonalization, emotional exhaustion and overall burnout decreased in the trial intervention arm and were sustained 1 year after the study [41]. A subsequent meta-analysis of interventions aimed at physician burnout indicates:

“both individual-focused and structural or organisational strategies can result in clinically meaningful reductions in burnout among physicians. Further research is needed to establish which interventions are most effective...how individual and organisational solutions might be combined to deliver even greater improvements in physician well-being than those achieved with individual solutions” (p. 2272) [42].

The Acquired Cardiovascular Disorders

Clinical guidelines concerning the workplace and CVD have mainly focused on physical exertion [43]. Thus, when evaluating work capacity limitation, these are based on non-invasive evaluation via exercise testing and echocardiography [44]. Although cardiac rehabilitation improves physical capacity and survival in patients with IHD, this does not consistently promote RTW [44]. Many work exposures are associated with elevated risk of IHD or hypertension, unrelated to physical exertion. This is true for physicians with IHD or hypertension. We suggested that

myocardial infarction among physicians should be considered potentially work-related [45]. As articulated over 3 decades ago, the challenge remains to offer the patient with CVD a style of work and life which protects health and the right to be productive [46]. These issues are salient vis-à-vis psychosocial job stressors, since such exposures are associated with increased risk of recurrent cardiac events after myocardial infarction [47-49]. In light of the importance of psychosocial and other workplace factors in the etiology and progression of IHD and hypertension, we suggested an integrated, graded approach to occupational cardiologic work-up, based upon degree of disease severity [50]. These guidelines are especially relevant for physicians, among whom, as noted [7], there is heightened risk of cardiovascular and cerebrovascular complications once hypertension develops. Blood pressure and electrocardiographic monitoring during work are crucial [18, 44, 50].

Malignancies

A Norwegian study examining RTW among patients with breast, prostate or testicular cancer confirmed that holding a job is vital to healthy survivorship [51]. A Swedish study of women with lymphedema after breast cancer surgery found that many participants increased their percentage of work time after a multi-faceted rehabilitation program [52]. Based on evidence that tumor growth is accelerated by suppression of melatonin secretion, women with previous or current breast cancer are advised against working night shifts [53]. Recently, physicians were found to have the highest breast cancer risk of all occupational groups [54], with shift work and ionizing radiation exposure implicated. There are very limited, mainly anecdotal data, concerning RTW among physicians after treatment of breast cancer or other malignancies. Dr. Carolyn Kaelin, oncologic surgeon and Director of the Comprehensive Breast Health Center at Brigham & Women’s Hospital, described her experiences “living through breast cancer” [55, 56]. Of her many insights, the most salient to RTW for physicians are the need to take full account of the extreme fatigue which accompanies chemotherapy, issues of disclosure and the importance of social support from colleagues, staff as well as patients.

Clinical Experience Applying the OSI for Return to Work among Physicians Afflicted with Stress-Related and Other Health Disorders

In various settings, the OSI has aided RTW by helping improve work conditions for physicians on sick leave due to breast cancer, other malignancies, burnout, depression, hypertension, IHD and/or rheumatologic disorders [18, 19, 26, 57]. The OSI also aided physicians who sought to avoid taking sick leave, by guiding

improvements in work conditions. The process begins by assessing the baseline job situation. Elements of work that bolster self-confidence and sense of achievement are preserved. Job stressors are identified, focusing on those likely to impact on clinical status and overall well-being. Feasible ways are sought to implement needed changes, aimed at lowering the total OSI score. Numerical guidelines and norms are given in reference 19, whereby a total OSI above 88 indicates the need for urgent intervention and above 100 as the acute danger level.

This comprehensive approach via the OSI, viewed together with clinical status, avoids oversheltering physicians, who are encouraged to perform challenging, but not over-taxing tasks. Thereby, overload and underload are averted. Underload reinforces the debilitating view that mental health disorder, cancer or other major illness will deprive a physician from successfully engaging in work activity. We consistently observed that this RTW strategy promotes a more positive outlook, resulting in feelings of empowerment and a sense of competence and dignity. When workplace modifications are successfully implemented, physicians flourish on an individual level, and often contribute to improving the work climate, e.g. promoting social support among colleagues [19]. It is critical to place an upper limit on work hours for physicians, taking into account clinical work plus pedagogical, research and administrative duties, and work-related activity performed at home. Especially for the initial RTW phase, nightshift work should usually be avoided. If the clinical situation is severe, part-time work is recommended. Regular, uninterrupted rest breaks with needed time for meals are essential.

The TAV and conflict/uncertainty scores are often very high among physicians on or potential candidates for sick leave. Some of these TAV stressors are fixed or relatively fixed: frequently encountering visually-disturbing scenes and emotionally-disturbing occurrences, potentially fatal consequences of a wrong decision, risk of infection due to close contact with blood and other body fluids. Caring for severely ill patients, threat of violence from patients' families, accidents, being faced with formal complaints or work-related litigation, and patient suicide further contribute to TAV burden. Among the relatively fixed stressors from the conflict/uncertainty aspect for physicians are the contradictory/conflicting nature of information and decision-making in medicine. Yet, much of the conflict/uncertainty burden could be ameliorated: frequent interruptions and other external factors that hamper patient care, emotionally-charged work atmosphere, blockage of career advancement and other violations of norms of behavior, performing multiple clinical and other tasks that objectively require separate time allocation. Fur-

ther distress occurs if obliged to perform tasks that appear to be unnecessary [58].

Published Case Studies Several clinical cases among physicians and other health professionals relevant to RTW were published in Refs. [18, 19, 26, 59]. The most detailed is that of a psychiatrist with burnout and suicidal ideation, with baseline total OSI score of 106 [19]. She had:

"become burned-out, in large measure, due to her work. Yet, return to work is pivotal for her recovery. We present a realistic plan for modifying the conditions under which she works, tailored to her clinical status, capacities and affinities. This is an iterative process; we start with the steps that can be immediately implemented, in order for [her] to get back to work with reasonable safety" [19].

These initial steps included elimination of nightshift work, limitation of total work hours (40 hours/week maximum) and scheduled genuine rest breaks. She was temporarily freed from emergency room duty, since it was a traumatic event therein, patient suicide, which triggered her clinical deterioration. With these and other measures, the total OSI was reduced to 88.9. These measures provided the precondition for addressing the more complex, psychosocial job stressors, some of which will be discussed here (see reference 19, for the full presentation, including stressors faced by academic physicians). Counter-measures for underload included recognition of good work, especially the many patients helped by her expertise and efforts. Efforts were made to repair breakdowns in communication between senior and junior physicians, which often resulted in clinical misjudgments, including the patient suicide which triggered our colleague's crisis. The emotional toll of caring for patients with severe psychiatric illness was candidly confronted. As her self-confidence was bolstered, she initiated a positive process encouraging colleagues to help each other with clinical difficulties, striving to nurture a "culture of validation and respect". With these and other measures, our colleague's total OSI score was reduced to 84.9, still high, but below the level at which urgent intervention is needed. Notably, the conditions under which she was working prior to her illness were not uncommon. The total OSI scores of other colleagues in her unit ranged from 95 to 108. Her case served as an occupational sentinel health event [60] whereby patterns of ill-health events caused by occupational factors go beyond a purely individual case approach to identify others at the workplace, who have also been affected. This is pivotal for intervening at the workplace to prevent outbreaks of occupational illness.

Conclusions

Participatory action research among physicians is a promising strategy for improving the work conditions and health of our profession. Occupation-spe-

cific instruments developed “for physicians by physicians” based on work stressor models play a key role, as seen in a substantial body of empirical literature. Finding the best strategies to aid return to work for physicians with stress-related or other disorders re-

mains a challenge, although clinical experience suggests that modified work conditions can yield positive results. Namely, return to *healthier* work enhances the physician’s empowerment and often contributes to improving the general work climate.

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