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ORIGINAL RESEARCH

Health-related behaviour among managers of Slovenian hospitals and institutes of public health

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Abstract

Aim: Behavioural risk factors have a significant impact on health. We aimed to assess health-related behaviour, health status, and use of healthcare services among managers of Slovenian hospitals and institutes of public health.
Methods: This was a cross-sectional study which included management (directors, scientific directors, directors' deputies) of Slovenian hospitals and institutes of public health (63 respondents; 57% women; overall mean age: 51±7 years; response rate: 74%). Data were obtained using an anonymous self-administered questionnaire.
Results: About 35% of respondents were directors. More than half of the respondents were overweight or obese (52%), the majority were not sufficiently physically active (59%) and overloaded with stress (87%). Hypercholesterolemia (36%), spinal disease (17%), and arterial hypertension (16%) were most common chronic diseases. Whilst only few participants visited their general practitioner due their health complaints, blood pressure (76%), cholesterol (51%), and glucose (54%) were measured within last year in most of the respondents.
Conclusion: Our findings point to a high prevalence of overweight and obesity as well as workplace-related stress among Slovenian public health managers. Therefore, effective preventive strategies should be focused on stress management along with promotion of healthy behavioural patterns.

Keywords: behavioural risk factors, healthy lifestyle, health promotion, healthcare institutions, managers.

Introduction

Behavioural risk factors such as smoking, excessive alcohol consumption, unhealthy diet, lack of physical activity, and stress have a significant impact on health. Previous studies have shown that cardiovascular disease, cancer, diabetes mellitus and some other chronic diseases are main causes of morbidity and mortality in developed countries, which can be largely attributed to unhealthy lifestyle (1). In a large prospective randomized study (N=2,339), Knoops and colleagues clearly indicated that individuals who followed the principles of the Mediterranean diet, consumed alcohol moderately, were regularly physically active, and refrained from smoking, had significantly lower cardiovascular and cancer mortality when compared to those with at least one behavioural risk factor (2).

Significant changes in employment policies that have emerged recently have exposed employees to new risks in terms of workplace safety and health. These are not limited to physical, biological and chemical risks, but expand to work-related psychosocial risk in particular (1,3). Funding restrictions, constant need for cost reduction, implementation of modern technology and clinical guidelines, as well as increased patient awareness and expectations increase the burden and responsibilities hospital managers need to cope with (3). Sounan and colleagues reported about negative associations between performance and health of hospital managers with workload, stress, psychical burden, and burnout they are exposed to (4). Furthermore, studies have shown that individual lifestyle pattern of managers also influences attitudes towards preventive activities and health promotion in the organisations they are employed in (5-8).

In Slovenia, there is scarce information about health-related behaviour and health status of healthcare institution managers. In 2005, Stergar and Urdih-Lazar conducted a survey among Slovenian managers about their attitudes towards own and employees' health and their willingness to implement health promotion programs (9). They mailed 5,500 questionnaires to large, medium and small enterprises and public institutions (including healthcare institutions) and received reply from about one third. Respondents were willing to take measures in different lifestyle areas, primarily in the fields of diet, physical activity, and weight management. More than two thirds, mostly those who already had health promotion in place and those who considered there is room for improvement of employees' health, would take health promotion actions and would be involved personally (9).

Individual health-related behaviour and healthy lifestyle pattern can translate to wider community, in particular if the individual is in position and has capacity to involve appropriate mechanisms. Healthcare institutions should serve as an example for preventive strategies and healthy lifestyle, which should be promoted and organized from a top-down perspective. With little available information, we aimed to assess health-related behaviour, health status and use of healthcare services among managers in Slovenian hospitals and institutes of public health. Our objectives were to have a snapshot of their daily habits, risk factor and disease burden, as well as their incentives to prevent diseases of modern age.

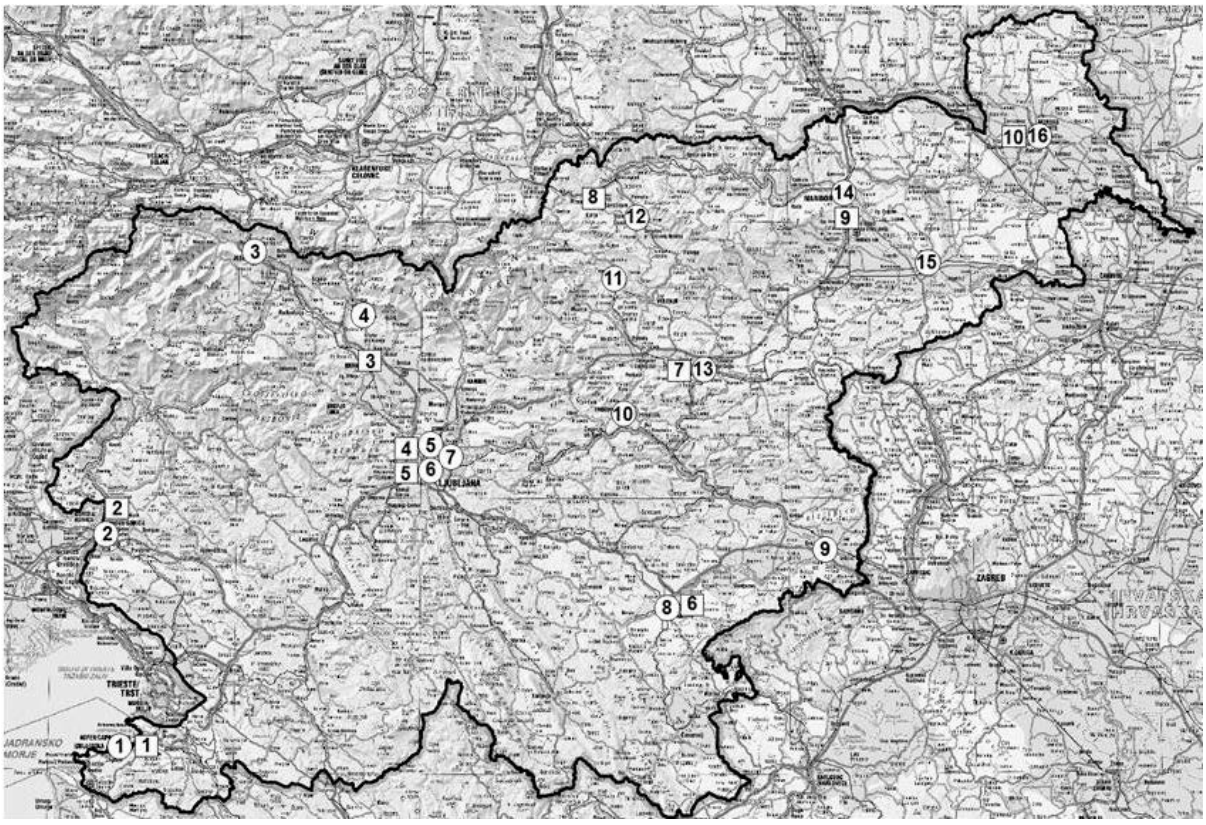
Methods

Study design and subjects

In this cross-sectional study, we invited management (directors, scientific directors, directors' deputies) of Slovenian general hospitals, university clinics, regional institutes of public health and national institute of public health – Figure 1. Information on the composition of each healthcare institution management is publicly available and accessible through healthcare institutions' websites; thus, we were able to invite all eligible subjects.

The study was conducted under auspices of Slovenian Network of Health Promoting Hospitals and Health Services in collaboration with Chair of Public Health, Faculty of Medicine, University of Ljubljana.
The study protocol was revised and approved by the National Medical Ethics Committee.

Figure 1. Healthcare institutions included in the study



□ *1-Regional Institute of Public Health (RIPH) Koper; 2-RIPH Nova Gorica; 3-RIPH Kranj; 4-RIPH Ljubljana; 5-National Institute of Public Health of the Republic of Slovenia; 6-RIPH Novo mesto; 7-RIPH Celje; 8-RIPH Ravne na Koroskem; 9;RIPH Maribor; 10;RIPH Murska Sobota.*

○ *1-General Hospital (GH) Izola; 2-GH dr. Franca Derganca Nova Gorica; 3-GH Jesenice; 4-University Clinic of Respiratory and Allergic Diseases Golnik; 5-University Medical Centre Ljubljana; 6-University Rehabilitation Institute of the Republic of Slovenia; 7-Institute of Oncology Ljubljana; 8-GH Novo mesto; 9-GH Brezice; 10-GH Trbovlje; 11-Topolsica Hospital; 12-GH Slovenj Gradec; 13-GH Celje; 14-University Medical Centre Maribor; 15-GH dr. Jozeta Potrca Ptuj; 16-GH Murska Sobota.*

Data collection

The "Countrywide Integrated Non-Communicable Disease Intervention (CINDI) Health Monitor Core Questionnaire", a standardized, validated and publicly available questionnaire, previously used for national health-related behaviour studies in Slovenia (10,11) was used to compile the study questionnaire. Anonymity was provided for all participants.
Overall, 30 questions were organized into three sections: demographic and other basic characteristics, health-related behaviour (smoking status, dietary habits, alcohol intake, physical activity, body weight and height), and health status including use of healthcare services (self-rated health, care for health, healthcare services utilization, diseases, and medication use). Questions regarding stress were also included. Additionally, we inquired

about participants' beliefs regarding the risk factor that predominantly contributes to poor health and high morbidity and mortality burden of the Slovenian adult population.
To reduce the risk for confounding responses the data collection was designed using a multiple-choice format with obligatory (required) items to be answered. In only five opened questions we inquired about year of birth, number of daily meals, body weight and height, and number of days per week and duration of physical exercise (all numerical values).
Questionnaires were mailed during April 2012 with study description, an invitation for study participation, and preaddressed return envelope. To enhance the study response, a gentle reminder notice was sent to all participants twice after first invitation and served as acknowledgement of participation (if individuals already responded), or as reminder to complete the questionnaire (if they did not respond to the initial invitation).
One unit of fruit or vegetables corresponded to 100g of fruit or vegetables (e.g. two tomatoes, or one bowl of salad, or one pot of turnip for vegetables; one middle sized apple, or one small banana, or one pot of cherries for fruits), as already used previously (10).
Body mass index (BMI) was calculated as body weight in kilograms divided by square of body height in meters. Malnutrition was defined as BMI<18.49 kg/m^2, normal nutritional status as 18.50-24.99 kg/m^2, overweight as 25.0-29.99 kg/m^2, and obesity as >30.0 kg/m^2 (12).
We inquired about leisure-time physical activity, including type and intensity of exercise (vigorous intensity: aerobics, running; moderate intensity: brisk walking, slow swimming; low intensity: walking), usual number of days with activity per week, and usual duration of exercise (less than, or more than 30 minutes). As per World Health Organisation (WHO) recommendations, at least 150 minutes of moderate or more intensive exercise was considered as beneficial for health (13), and subjects were divided into two groups by this cut-off.
When asked about contacts with their general practitioner or specialist, only visits related to personal issues were relevant for this study.

Statistical analysis

Descriptive statistics were used to present mean values and their respective standard deviations for the numerical variables, and absolute numbers and their respective proportions for the categorical variables.
SPSS, version 19.0 (Statistical Package for Social Sciences, SPSS Inc., Chicago, Illinois, USA) was used for all the statistical analyses.

Results

Response rate and study participants' characteristics

We mailed 85 questionnaires to all eligible management members, and received 66 responses (77.6%). Of those, three questionnaires were incomplete; thus, our final sample consisted of 63 (74.1%) subjects with an average age of 51.3±7.5 years. Most of them were women (57.1%), with at least a university degree (92.1%), and were acting as a director (34.9%). Other basic characteristics of study participants are presented in Table 1.

Health-related behaviour

Most of respondents never smoked (68.3%), whereas 12.7% were current smokers. Three daily meals was the most common type of dietary pattern (50.8%), whilst 20.6% and 7.9% of respondents consumed two or five meals, respectively. When consuming dairy products, 74.6% would usually select low-fat products. Whole-grain (27.0%), various sorts (25.4%) and white (15.9%) would usually be the first choice of bread. Almost two thirds of respondents (63.5%) consumed daily 1-3 units of vegetables and 1-3 units of fruit. Most of respondents

never used salt for served food (57.1%), and the rest would taste food prior to any additional salt. During last year, 19 (30.2%) respondents consumed alcohol few times yearly, 15 (23.8%) consumed alcohol twice a week, and 6 (9.5%) of respondents abstained completely.

Mean BMI was 25.2±4.2 kg/m^2, with 28 (44.4%) subjects being overweight and 5 (7.9%) obese; 50.8% were satisfied with their weight, whereas 30 (47.6%) would have liked to lose weight.

Car was a usual means of transport for most of respondents (84.1%), and only 7.9% walked or ride a bike to workplace. Very intense exercise was not practiced by 28 (44.4%), and the rest were usually active for >30 minutes per session, but mostly only once per week. Most individuals (49.2%) practiced moderate exercise up to three times/week, for >30 minutes (63.6%). Walking at least five times/week (65.0% of them for >30 minutes) was practiced by 17.5% of participants. WHO's criteria for healthy physical activity were not met by 58.7% of respondents.

Table 1. Basic characteristics of study participants

Basic characteristics	Number (column percentage)
Sex:	
Women	36 (57.1)
Men	27 (42.9)
Age:	
30-39 years	5 (8.0)
40-49 years	18 (28.7)
50-59 years	33 (52.4)
60-69 years	7 (11.2)
Marital status:	
Married	46 (73.0)
Consensual union	7 (11.1)
Single	6 (9.5)
Divorced	4 (6.3)
Widowed	0 (0)
Education:	
Secondary	1 (1.6)
College	4 (6.3)
University	31 (49.2)
Master or doctoral degree	27 (42.9)
Position:	
Director	22 (34.9)
Scientific director	11 (17.5)
Deputy, nursing	13 (20.6)
Deputy, other	17 (27.0)
Residence community:	
Urban	33 (52.4)
Suburban	16 (25.4)
Rural	14 (22.2)

Tension or stress was reported as daily, frequent and occasional experience by 6.3%, 31.7% and 49.2% of respondents, respectively. Workplace was the main cause of stress (73.0%), followed by poor relations with co-workers (20.6%) and family issues (6.3%).

Figure 2 presents how respondents cope with stress. Holiday leave pattern was balanced as 52.4% take few days several times per year and the rest prefers a longer leave.

We also inquired about participants' beliefs regarding importance of risk factors for poor health, morbidity and mortality burden in Slovenia (Figure 3).

Figure 2. Management of tensions, stress and pressures

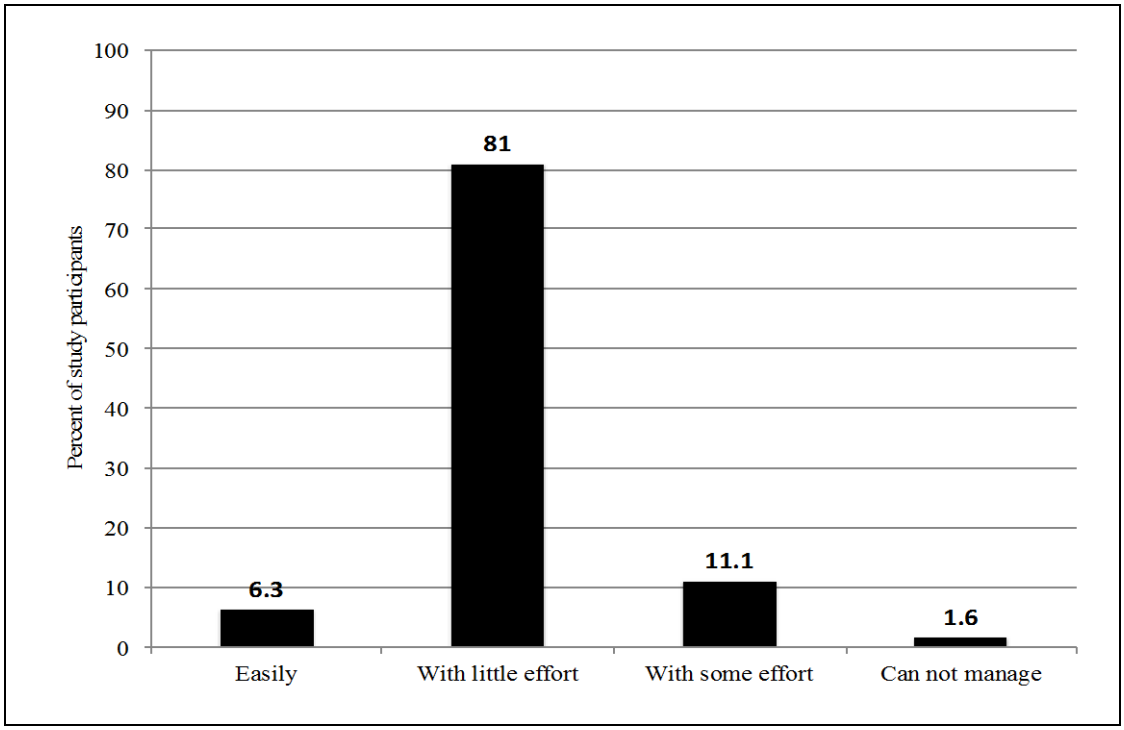
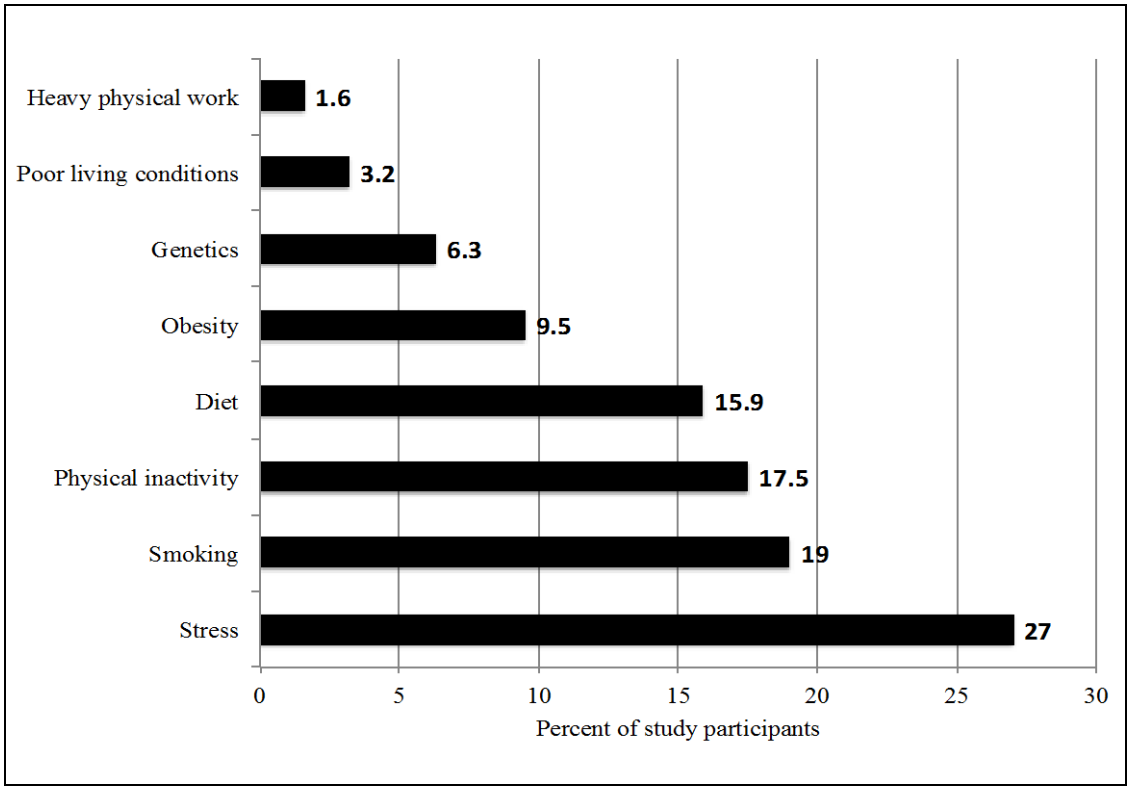


Figure 3. The risk factor that predominantly contributes to poor health and high mortality of the adult population in Slovenia



Health status and use of healthcare services

Most of respondents rated their health as good (68.3%), or very good (19.0%). More than half (58.7%) considered they took sufficient care for their health, whereas about a third (28.6%) deemed their care as inadequate.

During past year, 50.8% did not see their general practitioner or specialist, 44.4% cumulated three visits, and 4.8% had four or more visits.

Table 2 summarizes the prevalence of diseases or conditions diagnosed by a doctor and Figure 4 provides information about various diagnostic tests. In the week prior to study, 63.5% of respondents regularly took one medication, 25.4% had two, and 9.5% had three drugs. Vitamins and minerals (44.4%), medications against headache (27.0%), herbal medications (19.0%), antihypertensives (15.9%) and hypolipemics (12.7%) were the most commonly used medications.

Table 2. Prevalence of diseases or conditions in study participants diagnosed by a doctor

Disease or condition	Number (percentage)
Arterial hypertension	10 (15.9)
Hypercholesterolemia	23 (36.5)
Diabetes mellitus	2 (3.2)
Myocardial infarction	1 (1.6)
Angina pectoris	0 (0)
Heart failure	0 (0)
Stroke	1 (1.6)
Diseases and injuries of spine	11 (17.5)
Arthritis or arthrosis	7 (11.1)
Chronic obstructive pulmonary disease	0 (0)
Asthma	3 (4.8)
Gastric or duodenal ulcer	1 (1.6)
Liver cirrhosis	0 (0)
Depression	0 (0)
Thyroid disease	1 (1.6)

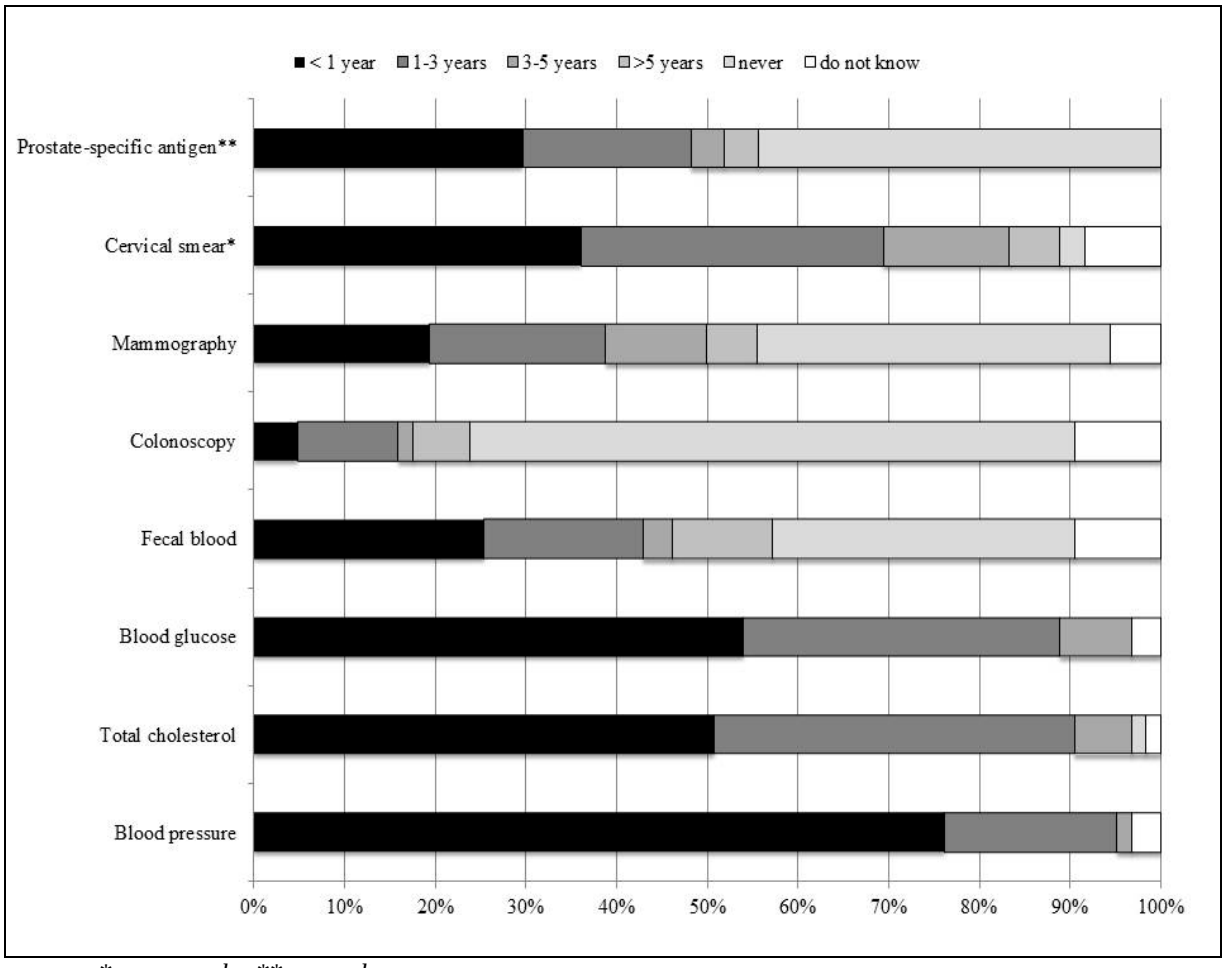
Discussion

Among Slovenian healthcare institution management, insufficient physical activity, overweight, and stress associated with workplace were most common behavioural risk factors. Most of respondents assessed chronic disease risk factors within last three years, perceived their health as good or better and considered they take sufficient care of their health. The most common disease was hypercholesterolemia, with a prevalence higher than the prescription of hypolipemic medications.

In comparison to results of “CINDI Health Monitor Survey 2008” (N=7,352, aged 25-74 years) managers in our study were somewhat more likely to report healthy dietary habits (e.g. low-fat dairy products, whole-grain bread, several units of fruit and vegetable daily) than the Slovenian general population, with no difference in number of daily meals (14). Additionally, managers in our study performed less often leisure-time physical activity, whilst frequent or daily exposure to stress was more common and usually associated with workplace burden and poor relations with co-workers.

Many healthcare institution managers have medical background thus comparison with previous reports of healthcare workers are possible. Fortic reported about regular smoking prevalence in the period 1972-1986, which was 30% among male healthcare workers and 20% among female healthcare workers (15). A recent Slovenian National Institute of Public Health study showed that 20.9% of healthcare workers are regular smokers, which is lower than a decade ago, and also lower than among general population. About half (52.9%) started smoking during the secondary school, but 15.6% started during the first years of work in a healthcare institution. Moreover, about a quarter reported that employees in their institution are not following the smoking ban (16). Similar information about smoking prevalence among healthcare workers is evident from Greece, Spain, Portugal, France, and Poland, with figures being the same or higher than among the general population (17). Our findings (12.7%), however, are more comparable to a lifestyle survey among 1,770 Italian cardiologists (12.4%), which in both cases is relevant and somehow balances inadequate physical activity and exposure to stress (18).

Figure 4. Time periods in which study participants completed various diagnostic tests



**women only; **men only.*

Although most Slovenian managers would like to stay physically active, this is mostly sporadic or limited to sport and recreational events. The latter is also driven with competitiveness; yet, the results usually are below expectations. Importantly, balanced lifestyle with daily physical activity, healthy diet, and relaxation is the key to success and

satisfaction with daily work (19). Our findings are in line with previous reports, as high intensity exercise was sporadic, and moderate intensity exercise was not meeting the quantity goal for health benefits. Moreover, overweight or obesity was present in more than half of our respondents, as was dissatisfaction with body weight.

European Survey of Enterprises on New and Emerging Risks (ESENER) showed that workplace related stress often induces issues for managers in healthcare and social sector (3). Jericek et al. reported an association between stress and healthcare institution workplace specifics, including conflicts among co-workers, potential lack of skills and knowledge needed for patient care, and ever increasing expectations of patients and public (20). Similar is mirrored by our finding that as many as 93.6% of respondents reported workplace-related stress that is difficult to manage. It is therefore not surprising that stress (followed by smoking and lack of physical activity) was identified as the most important risk factor contributing to poor health and high mortality among Slovenian adult population. To tackle this burden, Martincic emphasizes risk management strategies as well as communication, management and coordination skills, along with teamwork and regular assessment of organisational aspects (21). Top managers need to recognize safety and health aspects over economical issues, which follows a general strategy in an institution or enterprise (22).

Healthcare workers need to be aware of their role model in promotion of healthy lifestyles, which also provides additional credibility in daily professional routine (23,24). It is well-known that healthcare workers, who personally follow healthy lifestyle measures, are more in favour of health promotion and disease prevention activities in their clinical practice (18,25-27). In a survey that included 496 Swiss doctors, Cornuz and colleagues reported that personal lifestyle (more than three units of alcohol daily, sedentary lifestyle, and poor awareness about arterial hypertension) predicted a lower chance of alcohol and smoking advice delivered to the patients (23). Howe and colleagues studied personal health behaviours of 183 American hospital doctors in association with patient-related lifestyle counselling and reported an association between regular physical activity (>150min/week) and patient advice to exercise regularly and follow healthy diet (24). Similar to this, healthcare institution managers have a similar role model and should give personal examples to foster recognition of preventive activities and health promotion among co-workers and patients. Therefore, healthcare institutions have a certain degree of societal responsibility against patients and caregivers, employees, and local community. Thus, they should act accordingly (5,6). According to reports of International Network of Health Promoting Hospitals and Health Services, hospital management attitudes are crucial for clinical health promotion among patients, implementation of health promotion activities for employees and quality control (5-8).

We corroborated a previous report by Stergar and Urdih-Lazar (9) for self-rated health, which predominantly was good or better; this is in contrast with results among the general population, where the proportion with good or better self-rated health is halved (14,28), whereas there is little difference in attitudes towards health (14). Exact reasons are unknown but could be associated with better socioeconomic status and possibilities to implement healthy lifestyles.

Chronic diseases like hypercholesterolemia, spinal disease, and arterial hypertension were the most prevalent among our respondents. Most of these conditions would require management; yet, the extent of pharmacological therapy was not meeting the epidemiological situation. It may well be that non-pharmacological measures were in place or patients did not meet the risk profile for treatment initiation. It could also be due to personal preferences or discontinuation of therapy. Whilst most have had their risk factors assessed within last year, more than half of individuals had no appointment at their general practitioner or specialist.

Managers usually attend their regular health check-ups (every 3-4 years) and in-between these visits, they prefer to have specialist assessment (e.g. cardiologist, sonography, etc.) but rarely make an appointment with their general practitioner (19). Average age likely influenced screening for breast cancer, as almost two-thirds had no mammography (available for women between 50-69 years), and cervical carcinoma, with less than half having an exam within last year (29,30). Screening for occult gastrointestinal bleeding, colonoscopy and measurement of prostate specific antigen was less common; whilst, this could be a procedure related for colonoscopy, no evident reason for the others was present.

Our results need to be interpreted in the context of available information and some limitations. Cross-sectional studies in the field are lacking thus our findings contribute to present knowledge and action strategies. It also identifies issues that need more investigation to gain additional insight into health-related behaviours, health status, and use of healthcare services among this population. Although sample size can be regarded as modest, the response rate in relative terms was considerable. Due to study design, selection and recall bias as well as socially desirable answers are possible, particularly for behavioural risk factors. Finally, it would be more appropriate to compare our findings to subjects of similar educational level and socioeconomic status rather than to general population, but there are no available studies in the Slovenian population.

Conclusion

Managers of Slovenian hospitals and institutes of public health tend to keep a healthy diet, drink alcohol with moderation and rarely smoke. Nonetheless, more than half were either overweight or obese, most did not meet physical activity levels for a good health and reported significant exposure to stress, primarily due to workplace and poor relations with co-workers. Hypercholesterolemia, spinal disease and arterial hypertension were the most commonly reported diseases, but not all were treated. Risk factor assessment but not actual visits within 12 months were reported for most of respondents.

Our results suggest there are some burning issues among Slovenian healthcare institution managers that would need to be addressed. Generally, healthy lifestyle should be promoted, with particular emphasis on stress management, the most prevalent and important workplace-related risk factor. With individual awareness and positive attitudes towards personal health, community activities and interventions get more feasible, with potential implications for community risk and health profile.

Acknowledgement

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