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Work Stress and Risk Factors For Health Management Trainees in Canakkale, Turkey

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ABSTRACT

Aim: This study aims to investigate the general mental health situation, work-related stress and risk factors of health management trainees. **Methods:** This cross-sectional study was conducted on Health Management Musters students (N=96) in Canakkale Onsekiz Mart University Health Sciences Institute, May-June 2014. A total of 58 students who voluntarily participated in the study were reached (60.42%). Participants completed a 22-question sociodemographic survey form and a 12-item General Health Questionnaire in a face-to-face interview. Data were analyzed using the SPSS software version 20.0. **Results:** The average age of participants was 36.4±6.2 (Min:24-Max:62) years. Thirty five of the participants were female (60.3%), 23 were male (39.7%). The number of people using cigarettes and alcohol were 23 (39.7%) and 9 (15.8%) respectively. In our study group according to GHQ scale 32 people (55.2%) were in the group at risk of depression. Eighty-six percent of participants reported experiencing work stress. The most frequently reported sources of stress were superiors (56.8%), work itself (41.3%), and work colleagues (25.8%). There was no significant difference between those at risk of depression and those not at risk in terms of gender, marital status, educational level, age, work-related factors (daily work, computer use, duration of sitting at desk), sleep duration, presence of chronic disease, substance use (cigarettes, alcohol), regular exercise, regular meals, fast-food consumption, sufficient family time and vacations ($p>0.05$). **Conclusions:** Our study results indicated that majority of participants reported experiencing work stress with more than half at high risk of developing depression. The most reported risk factors were superiors, the work itself and colleagues in the present study. Psychosocial risk factors at work environment should be investigated in terms of psychological, sociological and ergonomics in more detail to reduce the risk of health management trainees experiencing work stress and mental health problems.

Key words: Health management trainees, mental health, stress, GHQ-12.

1. INTRODUCTION

Stress, a psychosocial factor affecting work health and work productivity, is an important public health problem today (1, 2). Work stress is an employee health problem that negatively affects the health of workers, disturbs public peace, and may cause harmful results for employee and employer. Work stress affects 22% of employees and threatens work health and safety (3). Physical and mental health problems damage the health of employees, and if necessary precautions are not taken against it, loss of work productivity may cause an increase in health spending (4). Work stress comprises 21.5% of health spending, 40% of hiring entry-exit costs, 50% of falls in work productivity, 50% of unplanned absences (absences caused by illness, etc.) and 33% of loss of manpower and employee compensation costs (5).

Currently there is a significant increase in the psychological, psychiatric and physical diseases caused by work stress (6, 7). Previous studies have shown that work stress is the primary cause of work-related health problems and may cause chronic diseases like cardiovascular diseases, musculoskeletal diseases, migraine and depression (8-10). Depression developing linked to work is one of the most important causes of long-term chronic diseases (11). Investigations of the relationship between depression and work environment have found an important increase. The cause of this increase is the continuous presence of depressive disorders in the work environment and it has an excessive negative effect on work productivity, performance, work absences and disability costs (12-14).

Work stress studies of occupational groups at risk have shown that physical, mental and social health problems that may develop after stress can be prevented. A study in Europe found that the occupational group with greatest risk of work stress was health personnel (15). To reduce the stress experienced linked to work by health personnel, especially nurses, or to prevent negative effects, it is very important to monitor risks in the work environment, increase work fulfilment and provide social support. Reducing the administration and clinical stress load of employees responsible for health management is advantageous to monitor work environment stressors to protect mental health. Studies of health workers and nurses in with work environment frequently use the 12-item General Health Questionnaire

(GHQ-12) form to monitor risk of developing depression and anxiety, mental health situation and stress levels (16-19). Stress and depression resulting from working conditions are important mental health problems among health professionals. One of the groups at risk of developing this health problem in their working life is health management trainees.

The aim of this study is to investigate the relationship between stress, risk of developing depression and risk factors of health management trainees.

2. METHODS

This was a cross-sectional study which was performed in the Health Science Institute of Canakkale Onsekiz Mart University, Canakkale, covering the period May-Jun 2014.

Study population and sampling

The population of this cross-sectional study comprised 96 students enrolled in Canakkale Onsekiz Mart University Health Sciences Institute Health Management Department Non-Thesis Masters program. Sampling was not completed as the aim was to reach the whole population. Our study included 58 students (response rate for our study was 60.42%).

Data collection

Participants completed a 22-question sociodemographic survey form and a 12-item General Health Questionnaire in a face-to-face interview. The sociodemographic survey form included questions about age, gender, educational level, marital status, cigarette and alcohol use, presence of chronic disease, working hours, work stress and causes, regular exercise and nutrition.

The General Health Questionnaire developed by Goldberg and Hillier (1979) is a short, easy-to-apply, self-evaluating survey for epidemiological research defining mental health problems used for societal scanning and first-stage health services (20). The Turkish validity and reliability studies were completed by Kılıç (21). The GHQ-12 is widely used to research mental discomfort like depression or anxiety that may be triggered by stress factors. This study used the GHQ point method (0-0-1-1); according to this method a score of 2 points or above is accepted as the "high risk group" for mental health problems.

Ethics

The study received written permission from Canakkale Onsekiz Mart University Clinical Research Ethics Committee dated 28.05.2014 and numbered 2014/10-06.

Statistical analysis

Data were analyzed using the SPSS software version 20.0. Descriptive statistics (frequencies, percentages, means, standard deviations) were used to describe groups of numerical data and the basic features of the data. The variables were investigated using visual (histograms, probability plots) and analytical methods (Kolmogorov-Simirnov/Shapiro-Wilk's test) to determine whether or not they are normally distributed. Chi-square test was used to examine the association between categorical variables. A p-value of less than 0.05 was considered statistically significant. In the present study, the dependent variable was "developing risk of mental health problem according to GHQ-12 scale. Independent variables were sociodemographic characteristics (gender, marital status, education, age), work-related factors (Daily work, computer use, duration of sitting at desk), having a chronic disease, healthy lifestyle behaviors (sleep duration, substance use (cigarettes, alcohol), regular exercise, regular meals, fast-food consumption, sufficient family timer and vacations).

3. RESULTS

The average age of participants was 36.4±6.2 (Min:24-Max:62) years. Thirty five of the participants were female (60.3%), 23 were male (39.7%) with 48 married (82.8%), 10 single (17.2%) and 55 graduates of university (94.8%). When the substance use of participants was examined the number of people using cigarettes and alcohol were 23 (39.7%) and 9 (15.8%) respectively (Table 1). The rate of those considering giving up alcohol was 37.5% with 28.6% feeling guilty for using alcohol. There were 10 people with chronic diseases (17.2%). The most frequently reported chronic diseases were 3 people

Characteristic	Frequency	Percent*
Gender		
Female	35	60.3
Male	23	39.7
Total	58	100.0
Marital status		
Married	48	82.8
Single	10	17.2
Total	58	100.0
Education		
Lisans	55	94.8
Yüksek lisans	2	3.4
Doktora	1	1.7
Total	58	100.0
Smoking status		
Yes	23	39.7
No	26	44.8
Kullandım bıraktım	9	15.5
Total	58	100.0
Drinking alcohol		
Yes	9	15.8
No	37	64.9
Kullandım bıraktım	11	19.3
Total	57	100.0

Table 1. Demographic characteristics of the study population, Çanakkale, 2014 (: The percentage of column)*

with hypertension (30%), 3 with asthma (30%), 2 with thyroid function disorders (20%) and 1 with diabetes (10%). When the occupations of participants were examined 22 (37.9%) were nurses, 6 (10.3%) were midwives, 4 (6.9%) were health officers and 26 (44.9%) were health workers from different occupational groups. When lifestyles were examined 16 participated in regular exercise (28.1%), 43 ate regular meals (75.4%) and 27 reported eating fast food (46.6%). Of participants 47 reported spending sufficient time with their families (81.0%). The workplace environmental factors were examined in the working group and the average working day, time at desk, computer use and sleeping durations are presented in Figure 1.

There were 39 people in the study group who had weekend holidays (68.4%). The average holiday duration was 1.7±0.4 days. When the last date of blood pressure reading was questioned 6 people (10.3%) couldn't answer the question, 11 people (18.9%) couldn't remember, 2 people (3.4%) had never measured it, 1 person (1.7%) said 4 years previous, 2 people (3.4%) said 3 years previous, 3 people (5.1%) said 1 year previous, 2 people (3.4%) said 6 months previous, 1 person (1.7%) said 5 months previous, 3 people (5.1%) said 3 months previous, 3 people (5.1%) said 2 months previous, 7 people (12.0%) said 1 month previous, 5

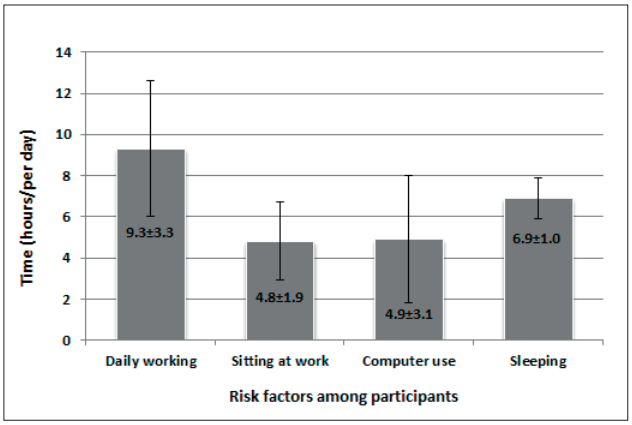

Figure 1. Mean values ± standard deviations of work-related factors among study population, Canakkale, 2014

people (8.6%) said 2-3 weeks previous, 5 people (8.6%) said 1 week previous and 7 people (12.0%) said within the last week. The number of the people who had consulted a physician regularly was 24 (41.4%).

In our study group according to GHQ points from the GHQ scale 32 people (55.2%) were in the group at risk of depression. Statistically, there was no significant difference between those at risk of depression and those not at risk according to the GSA scale in terms of gender, marital status, educational level, age, work-related factors (daily work, computer use, duration of sitting at desk), sleep duration, presence of chronic disease, substance use (cigarettes, alcohol), regular exercise, regular meals, fast-food consumption, sufficient family timer and vacations ($p>0.05$). When experience work stress in work environment was questioned, 86.0% of participants reported experiencing work stress. Of participants in the study 33 reported superiors (56.8%), 24 said work itself (41.3%), and 15 said work colleagues (25.8%) had caused them to experience work stress. Insufficient definition of duties, human resources, profession and distance from occupation were other reported stressors result in work stress among participants (Figure 2).

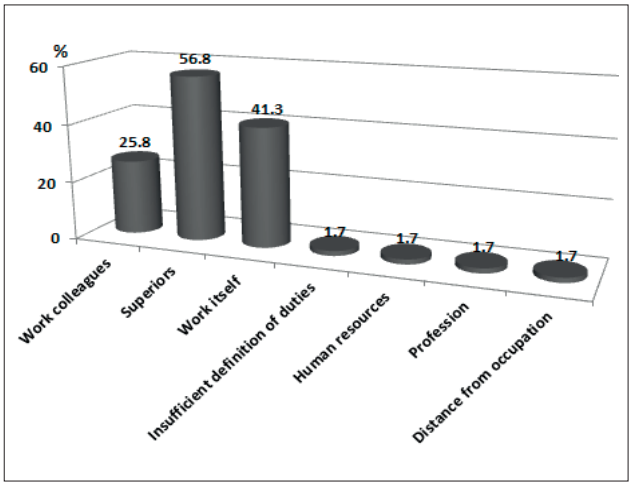

Figure 2. Stressors reported by study population, Canakkale, 2014. (One more than options were marked).

4. DISCUSSION

Our study aimed to investigate the general mental health and sociodemographic characteristics, work-related factors and factors like work stress in individuals pursuing a masters degree in health management. With this aim students in the Health Management Masters program of Canakkale Onsekiz Mart University, Health Sciences Institute, Health Management Department were included in the study. After the 2-year masters program is completed the health personnel will take the title Health management. The majority of participants were interviewed face-to-face and evaluated for general mental health with the 12-item General Health Questionnaire. Additionally sociodemographic factors and work-related factors that may affect mental health were investigated.

In our working group there were more women than men and more married than single. When the occupations of participants are examined the majority were nurses, midwives, health officers and other health workers. The cigarette use among participants was high (39.7%) while the use of alcohol was lower (15.8%). When other behavior related to healthy lifestyle was examined 16 took regular exercises, 43 ate regular meals and 27 ate fast-food. It has been reported that work stress, high workload and depression can negatively affect the eating habits of workers and may cause obesity, especially in female workers (22,23). Sagara et al. showed a significant relationship between increase in weight and development of mental health complaints (high GHQ-12 point) in male employees (24). In the literature it is reported that increasing exercise and limiting calorie intake can prevent weight gain and development of psychological heatlh problems (24-26). In our study, different to the literature, there was no statistically significant difference between those at risk of developing depression according to GHQ-12 scores and those not at risk in terms of regular physical activity. We believe that as health personnel are societal role models their healthy lifestyle and behavior attracts more attention and it may be beneficial, especially for personnel who will play a role in management of health services such as our working group, to participate in internal education on behavior to protect and enhance health. While chronic disease was present in at least 10 people in our study group, the most frequently reported chronic diseases were hypertension, asthma, thyroid function disorders and diabetes. In the literature it is reported that work stress may lead to chronic diseases such as cardiovascular diseases and musculoskeletal diseases (8-10). In our study, we also asked to our participants the last date of blood pressure measurement and the last date of general checkup. The minority of the participants reported that they had measured their blood pressure and also consulted a physician regularly. This finding indicated that health management trainees overlooked their health such as measuring blood pressure. Therefore all health professions in this study must be educated to recognize their own health checks and health-promoting opportunities.

In a study evaluating the psychological health of health workers in New Zealand, the GHQ-12 was used and while the highest points were for pharmacists, general practitioners and surgeons had similar average points (16). In our study according to the GHQ socres 32 people (55.2%) were found to have high risk of developing depression and anxiety. Statistically, there was no significant difference between those at risk of depression and those not at risk according to the GSA scale in terms of gender, marital status, educational level, age, work-related factors (daily work, computer use, duration of sitting at desk), sleep duration, presence of chronic disease, substance use (cigarettes, alcohol), regular exercise, regular meals, fast-food consumption, sufficient

family timer and vacations (p>0.05). Tabolli et al. in as study of biomedical researchers at a research institute in Rome identified that according to GHQ-12 scores 15.1% of participants were at risk of depression and anxiety, 77.4% were at risk of developing stress and 66% were dissatisfied with work. The most important determinants of work dissatisfaction are reported to be work opportunities, communication between departments, material rewards and participation in departmental organization. Work dissatisfaction related to economic rewards was a risk factor for developing depression independent of gender, age and duration of work (27). Another Italian study used the GHQ-12 to investigate the psychological status of health workers and found one third of participants were at risk of developing depression and anxiety (28). The most basic solution to prevent and reduce mental health problems such as development of depression and anxiety linked to psychological stress in the work environment, is to reduce workload while increasing work fulfillment and social supports. A study of personnel managing a hospital in Rome used the GHQ-12 to investigate psychological health and found 37.8% of participants were at high risk of developing depression and anxiety. The same study found that determinants of work dissatisfaction were low control of work and lack of communication between departments. Job dissatisfaction among management personnel was independent of age, gender and duration of work and was reported to be associated with high levels of risk of developing depression/anxiety, low work control and weak communication (29).

In the health sector, work stress presents as an important risk factor for health workers and at the same time is an important problem negatively affecting the quality of health services (30). In our study group, the majority of the participants reported that they had experienced work-related stress. Previous studies have emphasized the necessity of researching stress factors linked to work and psychosocial working environment in health workers, a high risk group for developing burnout, role conflict and work dissatisfaction (31, 32). As a result of the stress factors linked to work in health workers (long working hours, stressful work conditions, etc.) they remain at risk of developing many mental health problems such as work stress, burnout, depression, anxiety and post-traumatic stress disorder (16, 17, 19, 33). According to a study in an Italian hospital, working environment and ergonomy, shift-work and disruption of workflow are among the factors causing work-related stress (34). A study of 36 hospitals in America examined the stress factors in nurses and found that the top three stressors were workload, organizational pressure and role conflict (35). The most frequently reported sources of stress were superiors, the work itself and colleagues. Unclear description of duties, human resources, and distance from occupation and workplace were other reported causes of work stress. A study in Hungary emphasized that there is an important relationship between burnout, role conflict and mental health in the psychosocial work environment of health workers (31). A study of nurses in Belgium showed that workload, burnout, work satisfaction and expectations were factors affecting the relationship between workers in the work environment and between workers and management (36).

In our study, workplace factors were examined and the average working day was 9.3±3.3 hours, with 4.8±1.9 hours sitting at a desk and 4.9±3.1 hours computer use. In the literature it is reported that work environment factors like the duration of the working day, time spent sitting at work and time working on a computer may cause psychosocial factors (work stress, depression, anxiety, etc) and musculoskeletal diseases (37-39). In our study while the time for sitting at a desk and using computers were at acceptable levels, the average work day of participants was above the legal limit, more than 8 hours. But long working hours negatively affect the health of workers and has been shown to cause harmful results in sensitive individuals (40, 41). Additionally increased working hours may trigger risk factors for developing depression such as heavy workload, smoking and sleep disorders (42, 43). In our study the duration of sleep was 6.9±0.1 hours. When the active working hours of health professionals are considered, heavy workloads, such as being on call, can reduce the duration of sleep and sleep quality. It is reported that middle managers in hospitals could be rewarded for intense workloads, heavy responsibilities and long working hours. However, heavy workloads may cause role conflict, tiredness, burnout and mistakes, interrupting patient care and negatively affecting family life (44). In our working group 39 of the participants had a weekend holiday and 47 declared they created sufficient time for family. Needs such as weekend holidays and sufficient time with family, which are relaxing and important from the point of view of social support, can reduce work stress and the risk of developing depression, aiding in protecting mental health.

In a study by Lao, factors affecting work satisfaction among health workers included solving conflict in the workplace, relationships with colleagues and organizational structure (45). In our working group among the leading causes of work stress were colleagues and superiors. Interpersonal communication and increased social opportunities may solve these problems. Recently new methods of managing hospitals have begun to be developed, and studies have been completed on groups of individuals with high work satisfaction, programs with experienced managers and improving communication levels to increase social support in the workplace and reduce stress factors (46, 47). A study of managers in Switzerland found that though improving communication between workers and with patients with positive support for widespread communication at all levels, some health organizations may encounter violent consequences linked to not taking sufficient care with communication (47). According to a study in India, the most important motivation factor not requiring material resources that must be considered by managers and political structures was reported as the opportunity for workers to develop skills in the work environment (48).

The result of this study was that those at risk of developing mental health problems like depression or those with other physical or social health problems were directed to psychiatry and other related branches. To protect work health, an important part of societal health, it is important to monitor risk groups. Additionally employers can periodically monitor and measure work environment factors in the workplace to prevent physical and mental chronic health problems that may accompany the development of work stress risk. Organizations and managers can organise social activities to strengthen inter team communication and reduce the stress levels among workers in the workplace.

5. CONCLUSION

In this study, the majority of participants reported experiencing work stress with more than half at high risk of developing

depression according to the GHQ-12 scale. The top three risk factors affecting stress among individuals in the study were superiors, work and colleagues. In our study group while there was no difference found between those at risk of depression and those not at risk in terms of sociodemographic characteristics, work-related factors and health behavior, to reduce the risk of health management trainees experiencing work stress and mental health problems psychosocial risk factors in the work environment should be investigated in more detail.

CONFLICT OF INTEREST: NONE DECLARED.

REFERENCES

1. Parlar S. Sağlık çalışanlarında göz ardı edilen bir durum: Sağlıklı çalışma ortamı. TAF Prev Med Bull. 2008; 7: 547-554.
2. Demiral Y, Ünal B, Kılıç B, Soysal A, Bilgin AC, Uçku R, ve ark. İş stresi ölçeğinin İzmir Konak Belediyesi'nde çalışan erkek işçilerde geçerlik ve güvenilirliğinin incelenmesi. Toplum Hekimliği Bülteni. 2007; 26: 11-18.
3. Work-related stress: new challenges in a changing workplace. the European Risk Observatory (ERO), part of EU-OSHA, unveiled the emerging risks related to workplaces. 2008. http://www.epha.org/a/2899 [Erişim Tarihi: 13.12.2009]
4. Goetzel RZ, Hawkins K, Ozminkowski RJ, Wang S. The health and productivity cost burden of the "Top 10" physical and mental health conditions affecting six large U.S. employers in 1999. J Occup Environ Med. 2003; 45: 5-14.
5. Stress in the Workplace. What's eating your company? Recruiters World Special Reports. [Erişim Tarihi: 23.04.2009] http://www.recruitersworld.com/articles/rw/special/stress.asp
6. Şahin NH, Güler M, Basım HN. A tipi kişilik örüntüsünde bilişsel ve duygusal zekanın stresle başa çıkma ve stress belirtileri ile ilişkisi. Türk Psikiyatri Dergisi. 2009; 20: 243-254.
7. Driessen MT, Anema JR, Proper KI, Bongers PM, van der Beek AJ. Stay@Work: Participatory Ergonomics to prevent low back and neck pain among workers: design of a randomised controlled trial to evaluate the (cost-)effectiveness. BMC Musculoskelet Disord. 2008; 9: 145.
8. Kivimäki M, Leino-Arjas P, Luukkonen R, Riihimäi H, Vahtera J, Kirjonen J. Work stress and risk of coronary mortality: Prospective cohort study of industrial employees. British Medical Journal. 2002; 325: 857-863.
9. Employment Relations & Union Services. Health & safety-workplace stress. ERUS H&S 01 May 2004, The Chartered Society of Physiotherapy, www.csp.org.uk [Erişim Tarihi: 15.08.2010]
10. World Health Organization. Mental health: New understanding, WHO: New hope Geneva, 2001.
11. Unger HP. Work-related depression. Psychiatr Prax. 2007; 34 Suppl 3: 256-260.
12. Chopra P. Mental health and the workplace: issues for developing countries. Int J Ment Health Syst. 2009; 3(1): 4.
13. Bender A, Farvolden P. Depression and the workplace: a progress report. Curr Psychiatry Rep. 2008; 10(1): 73-79.
14. Lerner D, Henke RM. What does research tell us about depression, job performance, and work productivity? J Occup Environ Med. 2008; 50(4): 401-410.
15. Milczarek M, Schneider E, González ER. European Risk Observatory Report. OSH in Figures: Stres at work-facts and figures. European Agency for Safety and Health at Work. Luxembourg: Office for Official Publications of the European Communities, 2009: 20-21. ISBN 978-92-9191-224-7.
16. Dowell AC, Westcott T, McLeod DK, Hamilton S. A survey of job satisfaction, sources of stress and psychological symptoms among New Zealand health professionals. The New Zealand Medical Journal. 2001; 114(1145): 540-543.
17. Gomes AR, Teixeira PM. Stress, Cognitive Appraisal and Psychological Health: Testing Instruments for Health Professionals. Stress Health. 2014 May 29. doi: 10.1002/smi.2583. [Epub ahead of print]
18. Foureur M, Besley K, Burton G, Yu N, Crisp J. Enhancing the resilience of nurses and midwives: pilot of a mindfulness-based program for increased health, sense of coherence and decreased depression, anxiety and stress. Contemp Nurse. 2013; 45(1): 114-125.
19. Lim AG, Stock L, Shwe Oo EK, Jutte DP. Trauma and mental health of medics in eastern Myanmar's conflict zones: a cross-sectional and mixed methods investigation. Confl Health. 2013; 7(1): 15.
20. Goldberg DP, Hillier VF. A scaled version of the General Health Questionnaire. Psychol Med. 1979; 9: 139-145.
21. Kılıç C. Genel Sağlık Anketi: Güvenilirlik ve geçerlilik çalışması. Türk Psikiyatri Dergisi. 1996; 7: 3-9.
22. Nishitani N, Sakakibara H, Akiyama I. Eating behavior related to obesity and job stress in male Japanese workers. Nutrition. 2009; 25: 45-50.
23. Block JP, He Y, Zaslavsky AM, Ding L, Ayanian JZ. Psychosocial stress and change in weight among US adults. American Journal of Epidemiology. 2009; 170(2): 181-192.
24. Sagara T, Hitomi Y, Kambayashi Y, Hibino Y, Matsuzaki I, Sasahara S, et al. Common risk factors for changes in body weight and psychological well-being in Japanese male middle-aged workers. Environ Health Prev Med. 2009; 14(6): 319-327.
25. Hansen AM, Blangsted AK, Hansen EA, Søgaard K, Sjøgaard G. Physical activity, job demand-control, perceived stress-energy, and salivary cortisol in white-collar workers. Int Arch Occup Environ Health. 2010; 83(2): 143-153.
26. Canan F, Ataoğlu A. Anksiyete, depresyon ve problem çözme becerisi algısı üzerine düzenli sporun etkisi. Anadolu Psikiyatri Dergisi. 2010; 11: 38-43.
27. Tabolli S, Di Pietro C, Renzi C, Abeni D. Job satisfaction and psychological wellbeing in bio-medical researchers. G Ital Med Lav Ergon. 2010; 32(3 Suppl B): B17-B22.
28. Ianni A, Tabolli S, Renzi C, Di Pietro C. Job satisfaction, depressive and anxiety disorders among hospital personnel at IDI Sanità, Rome. Recenti Prog Med. 2004; 95(5): 245-250.
29. Tabolli S, di Pietro C, Luigi Aparo U, Renzi C. Psychological wellbeing in the hospital administrative personnel. Ann Ig. 2010; 22(2): 157-164.
30. Rizzo M, Peresson M, Filon FL. Approach to the assessment of occupational stress at a hospital. G Ital Med Lav Ergon. 2012; 34(3 Suppl): 716-719.
31. Piko BF. Burnout, role conflict, job satisfaction and psychosocial health among Hungarian health care staff: a questionnaire survey. Int J Nurs Stud. 2006; 43(3): 311-318.
32. Renzi C, Tabolli S, Ianni A, Di Pietro C, Puddu P. Burnout and job satisfaction comparing healthcare staff of a dermatological hospital and a general hospital. J Eur Acad Dermatol Venereol. 2005; 19(2): 153-157.
33. Sevencan F, Cayir E, Uner S. Burnout status of interns and associated factors. Cah Sociol Demogr Med. 2010; 50(4): 501-515.
34. Cortese CG, Gerbaudo L, Manconi MP, Violante B. Identifica-

tion of risk factors for work-related stress in a hospital: a qualitative and quantitative approach. Med Lav. 2013; 104(2): 141-157.
35. Kath LM, Stichler JF, Ehrhart MG, Sievers A. Predictors of nurse manager stress: a dominance analysis of potential work environment stressors. Int J Nurs Stud. 2013; 50(11): 1474-1480.
36. Van Bogaert P, Clarke S, Willems R, Mondelaers M. Nurse practice environment, workload, burnout, job outcomes, and quality of care in psychiatric hospitals: a structural equation model approach. J Adv Nurs. 2013; 69(7): 1515-1524.
37. Blozik E, Laptinskaya D, Herrmann-Lingen C, Schaefer H, Kochen MM, Himmel W, et al. Depression and anxiety as major determinants of neck pain: a cross-sectional study in general practice. BMC Musculoskelet Disord. 2009; 10: 13.
38. Klussmann A, Gebhardt H, Liebers F, Rieger MA. Musculoskeletal symptoms of the upper extremities and the neck: A cross-sectional study on prevalence and symptom-predicting factors at visual display terminal (VDT) workstations. BMC Musculoskelet Disord. 2008; 9: 96.
39. Norman K, Floderus B, Hagman M, Toomingas A, Tornqvist EW. Musculoskeletal symptoms in relation to work exposures at call centre companies in Sweden. Work. 2008; 30(2): 201-214.
40. Caruso CC, Bushnell T, Eggerth D, Heitmann A, Kojola B, Newman K, et al. Long working hours, safety, and health: toward a National Research Agenda. Am J Ind Med. 2006; 49(11): 930-942.
41. Fujino Y, Horie S, Hoshuyama T, Tsutsui T, Tanaka Y. A systematic review of working hours and mental health burden. Sangyo Eiseigaku Zasshi. 2006; 48(4): 87-97.
42. Sato Y, Miyake H, Thériault G. Overtime work and stress response in a group of Japanese workers. Occup Med (Lond). 2009; 59(1): 14-19.
43. Ikeda T, Nakata A, Takahashi M, Hojou M, Haratani T, Nishikido N, et al. Correlates of depressive symptoms among workers in small- and medium-scale manufacturing enterprises in Japan. J Occup Health. 2009; 51(1): 26-37.
44. Buchanan DA, Parry E, Gascoigne C, Moore C. Are healthcare middle management jobs extreme jobs? J Health Organ Manag. 2013; 27(5): 646-664.
45. Khamlub S, Harun-Or-Rashid M, Sarker MA, Hirosawa T, Outavong P, Sakamoto J. Job satisfaction of health-care workers at health centers in Vientiane Capital and Bolikhamsai Province, Lao PDR. Nagoya J Med Sci. 2013; 75(3-4): 233-241.
46. Buttigieg SC, West MA. Senior management leadership, social support, job design and stressor-to-strain relationships in hospital practice. J Health Organ Manag. 2013; 27(2): 171-192.
47. Haberey-Knuessi V, Heeb JL, De Morgan PE. Communication among hospital leaders. Rech Soins Infirm. 2013; (115): 8-18.
48. Peters DH, Chakraborty S, Mahapatra P, Steinhardt L. Job satisfaction and motivation of health workers in public and private sectors: cross-sectional analysis from two Indian states. Hum Resour Health. 2010; 8: 27.