

## SOCIO-DEMOGRAPHIC CHARACTERISTICS AND JOB SATISFACTION OF HEALTHCARE WORKERS

Dijana Đurić<sup>1</sup>, Biljana Mirković<sup>2</sup>

<sup>1</sup>Zavod za fizikalnu medicinu i rehabilitaciju "Dr Miroslav Zotović" Slatinska 11, 78 000 Banja Luka, Bosna i Hercegovina, dijanadj1706@gmail.com

<sup>2</sup>Univerzitet u Banjoj Luci, Filozofski fakultet, Odsjek za psihologiju, Bulevar Vojvode Petra Bojovića 1, 78 000 Banja Luka, Bosna i Hercegovina

### ABSTRACT

Job satisfaction is the cognitive, affective, and evaluative response of an individual to their job. This study aimed to examine whether there are differences in the general job satisfaction depending on the socio-demographic characteristics of healthcare workers: gender, age, level of education, duration of service, marital status, income and work in shifts. The sample consisted of 257 healthcare workers (74.7% female) from Bosnia and Herzegovina, aged 20 to 64 ( $M=40.75$ ,  $SD=11.71$ ). We used the general Job Satisfactin Scale (Judge, Thoresen, Bono, & Patton, 2000) and socio-demographic characteristics questionnaire. For data processing, the t-test, analysis of variance and the post hoc LSD test was used. In the general job satisfaction, a statistically significant difference was calculated, taking into account age ( $F(3,248)=6.338$ ,  $p=.000$ ,  $\eta^2=.071$ ), duration of service ( $F(3,242)=4.775$ ,  $p=.003$ ,  $\eta^2=.023$ ), income ( $F(4,249)=17.662$ ,  $p=.000$ ,  $\eta^2=.022$ ), and work in shifts ( $t(252)=3.46$ ,  $p=.001$ ,  $\eta^2=.045$ ). Healthcare workers aged 31 to 40 years, healthcare workers with less than 10 years of service, healthcare workers who are extremely dissatisfied with income, and healthcare workers working in shifts are the least satisfied with the job. This study's findings indicate that job satisfaction is present in different demographic categories of healthcare workers to varying degrees.

**Keywords:** general job satisfaction, socio-demographic characteristics, healthcare workers.

### INTRODUCTION

Job satisfaction is a cognitive, affective and evaluative response of an individual to their job (Grinberg, 1998). Bovier (2001), and Parnell and Crandall (2003) pointed out that job satisfaction is one of the most studied employees' attitudes. There are a few important reasons for this. The satisfaction of employees increases motivation and productivity. More satisfied employees are less absent from work and less likely to leave a job (Judge et al., 2001; Kohler, & Mathieu, 1993; Koys, 2001). They create a better working atmosphere and a positive impact on other colleagues (Koys, 2001). A significant correlation was found between job satisfaction and employees' physical and mental health (Gechman, & Wiener, 1975; Vecchio, 1995). Job dissatisfaction is significantly correlated with the onset of burnout syndrome, depression and anxiety (Faragher, Cass, & Cooper, 2005). Furthermore, job satisfaction can reflect organizational functioning (Kavita, & Kalpana, 2012). Differences among organizational units in job satisfaction can diagnose potential trouble spots (Landy, 1989). The reason is that a satisfied employee is a productive employee and that the organization's success cannot be achieved with dissatisfied employees.

Due to previous, exploring of job satisfaction is very important in health care organization, too. Low job satisfaction at hospital nurses generally reduces employee mood, which often, in addition to absence from work, delays, change of job and retirement, is manifested by increased employees' anxiety (Coomber, & Barriball, 2007). Dissatisfied professionals in human services have a greater predisposition to develop various health problems, and their health can directly affect the stability of the workforce of health care providers (Mc Nelly, 1988).

Job satisfaction affects the quality of performance of tasks, activity, and productivity (Yurumezoglu, & Kocaman, 2012; Wilson, Squires, Widger, Cranley, & Tourangeau, 2008; Laschinger, 2012). Alves, Neves, Dela and Oliveira (2012) have described the positive influence of delighted health care professionals on the quality of the services provided. In the long term, job satisfaction affects employee motivation, careers, health and attitudes towards co-workers (Van, Alavinia, Bredt, Lindeboom, Elders & Burdorf, 2008; Van, & Swaen, 2003; Makowiec-Dabrowska et al., 2008). Dissatisfied workers are more likely to provide inferior services, and the physical and mental status and the social functioning of these workers can be affected substantially by the level of their job satisfaction (Mc Nelly, 1988).

Various researchers have found multiple factors, affect job satisfaction at health care professionals, like gender, age, level of education, professional experience, organization of work, working shift, working conditions, payment, expectations of a worker promotion and similar (Okerlund, Jackson, & Parsons, 1997; Freeborn, 2001; Haas et al., 2000; Bovier, 2001; Judge, et al., 2001; Kivimaki, Kalimo, & Lindstrom, 1994; Verschuren, & Masselink, 1997). On another side, some other researches didn't confirm a significant relationship between those factors and job satisfaction (Reid, Hurst, & Anderson, 2000; Pugh, 2016; Tarcan, Hikmet, Schooley, Top, & Tarcan, 2017; Khosravi, & Kasaeiyan, 2019; Kavanaugh, Duffy, & Lilly, 2006).

Bearing in mind the importance of job satisfaction of healthcare workers and the conflicting findings of previous studies, this study aimed to investigate whether there are differences in the general job satisfaction depending on the socio-demographic characteristics of healthcare workers: gender, age, level of education, duration of service, marital status, income and work in shifts, of healthcare workers from Bosnia and Herzegovina.

## METHOD

### Participants and procedure

The sample consisted of 257 healthcare workers (74.7% female) from three hospitals in Bosnia and Herzegovina. The sample was divided into four age cohorts: up to 30 years of age (25.7%), 31-40 years (27.6%), 41-50 years (21%), and over 51 years (25.7%). In terms of the duration of service, the sample was divided into four cohorts: up to 10 years of service (39.7%), 11-20 years (26%), 21-30 years (21.8%) and 31 and more years (12.5%). Participants' level of education ranged from high school degree (40%), college degree (10.1%), university degree (44.4) to a postgraduate degree (8.6%). For the marital status, 61.9% were married and 38.1% were not married. In terms of income, the sample was divided into five cohorts: extremely dissatisfied (12.8%), mostly dissatisfied (19.5%), neither satisfied nor dissatisfied (32.3%), mostly satisfied (33.5%), completely satisfied (1.9%). Considering the shifts, 54.5% were healthcare workers who work in one shift and 45.5% working more shifts.

Data were collected in hospitals during working hours using a paper-and-pencil format. Participation was anonymous and voluntary. The participants filled out the questionnaires under the supervision of the researchers.

### Instruments

*Job Satisfactin Scale* (Judge et al., 2000). The questionnaire consists of five items that measure general job satisfaction. The participants' responses to the JSS are given on a 5-point Likert type scale from 0 (*Strongly disagree*) to 5 (*Strongly agree*). Higher results on the scale indicate a higher level of overall job satisfaction. For this study, the Cronbach's alpha was .85.

*Socio-demographic Characteristics Questionnaire*. The questionnaire consisted of seven questions about the following demographic characteristics: gender, age, level of education, duration of service, marital status, income and work in shifts (one shift/more shifts).

### Data analysis

For data analysis, we used the following statistical procedures: descriptive statistics, *t-test* for independent samples, Analysis of Variance (*ANOVA*) and the following *post-hoc tests*. Data analysis was performed using the statistical software package SPSS for Windows, version 22.0.

## RESULTS

Table 1 presents the descriptive statistical measures for the Job Satisfaction Scale. Measures of average and variability, skewness and kurtosis indicate that results of respondents were moderately shifted towards higher values (Tabachnick, & Fidell, 2001).

Table 1. Descriptive statistical measures for the Job Satisfaction Scale.

	Min	Max	M	SD	Sk	Ku
Job satisfaction	5	25	18.52	4.09	-.84	.67

The ANOVA results have shown a significant difference in job satisfaction considering the age of healthcare workers ( $F(3,253) = 6.34, p = .000$ ). The effect size is medium. The service duration explains 7.1% of the variance in job satisfaction ( $\eta_p^2 = .071$ ). Results of LSD post hoc test reveal that healthcare workers aged 31-40 years show the highest level of job satisfaction ( $M = 17.21, SD = .58$ ), while healthcare workers aged over 51 years show the lowest level of overall job satisfaction ( $M = 20.18, SD = .37$ ). Healthcare workers under the age of 30, 31-40 years and 41-51 do not significantly differ in job satisfaction (Figure 1).

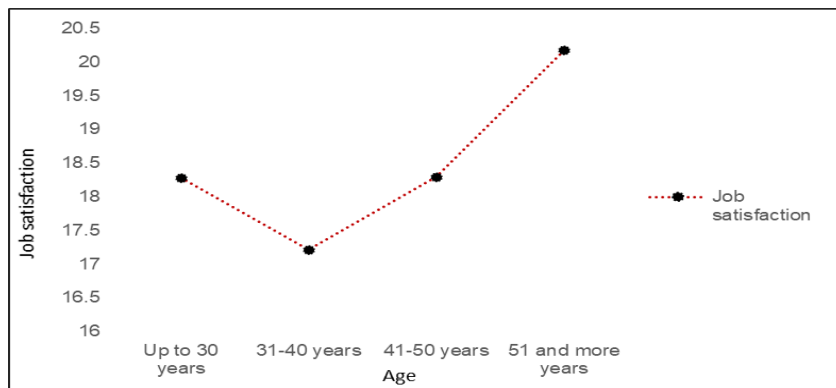


Figure 1. The relationship between age and job satisfaction.

The ANOVA results have shown a significant difference in job satisfaction considering the duration of service of healthcare workers ( $F(3,253) = 4.77, p = .003$ ). However, the effect size is small. The service duration explains only 2.3% of the variance in job satisfaction ( $\eta_p^2 = .023$ ). Results of LSD post hoc test reveal that healthcare workers with less than 10 years of service show the lowest level of job satisfaction ( $M = 17.79, SD = 4.77$ ), while healthcare workers with 31 and more years of service show the highest level of job satisfaction ( $M = 20.48, SD = 2.65$ ). Healthcare workers with less than 10 years of service and those with 11-20 years of service do not significantly differ in job satisfaction. Also, healthcare workers with 11-20 years of service and those with 21-30 years of service do not significantly differ in job satisfaction. Finally, healthcare workers with 21-30 years of service and those with 31 and more years of service also do not significantly differ in job satisfaction (Figure 2).

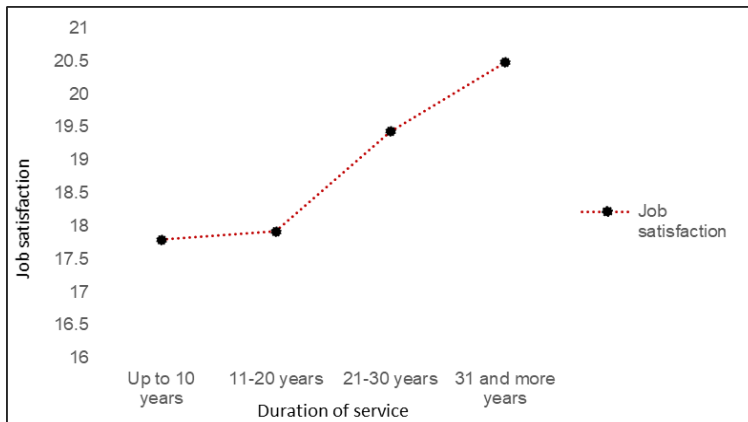


Figure 2. The relationship between duration of service and job satisfaction.

The results of the *t-test* for independent samples have shown a significant difference in job satisfaction considering the work in shifts of healthcare workers ( $t(253)=3.46, p=.001$ ). However, the effect size is small. Work in shifts explains only 4.5% of overall job satisfaction variance ( $\eta_p^2=.045$ ). Healthcare workers who work in one shift show a higher level of job satisfaction ( $M=19.31, SD=3.74$ ) than those who work more shifts ( $M=17.56, SD=4.29$ ) (Figure 3).

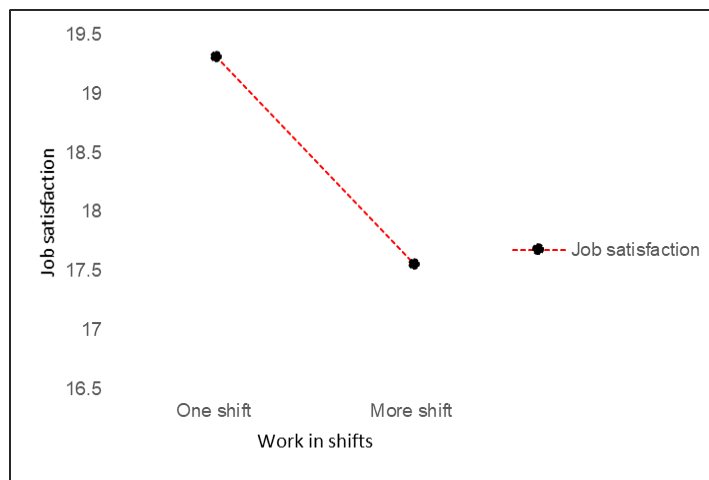


Figure 3. The relationship between work in shifts and job satisfaction.

The ANOVA results have shown a significant difference in job satisfaction considering the income of healthcare workers ( $F(4,252)=17.662, p=.000$ ). However, the effect size is small. The income explains only 2.2% of the variance in job satisfaction ( $\eta_p^2=.022$ ). Results of LSD post hoc test reveal that healthcare workers who are extremely dissatisfied with income show the lowest level of job satisfaction ( $M=14.85, SD=5.48$ ), while healthcare workers who are mostly satisfied with income show the highest level of job satisfaction ( $M=20.48, SD=3.03$ ). Healthcare workers who are mostly satisfied with income and those who are completely satisfied with income do not significantly differ in job satisfaction (Figure 4).

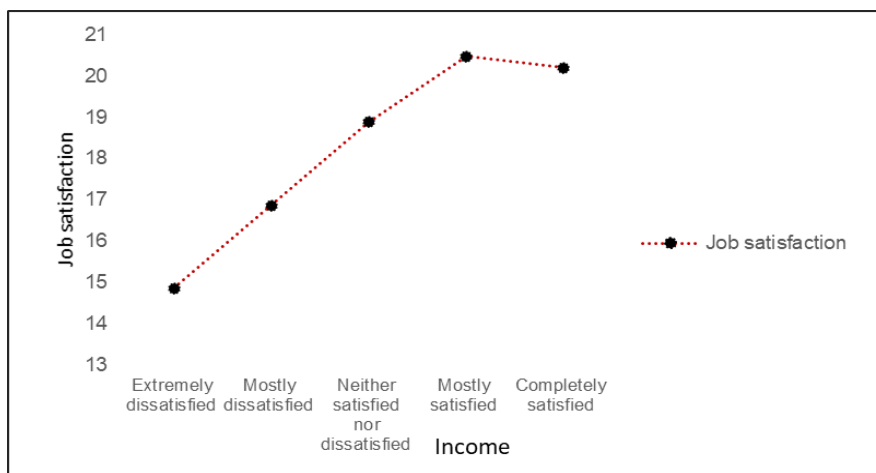


Figure 4. The relationship between income and job satisfaction.

The results of the *t-test* for independent samples have shown a significant difference in job satisfaction considering the marital status of healthcare workers ( $t(255) = -2.23, p = .027$ ). However, the effect size is small. Marital status explains only 1.9 % of job satisfaction variance ( $\eta_p^2 = .019$ ). Married healthcare workers show a higher level of job satisfaction ( $M = 18.96, SD = 3.95$ ) than unmarried healthcare workers ( $M = 17.91, SD = 4.22$ ) (Figure 5).

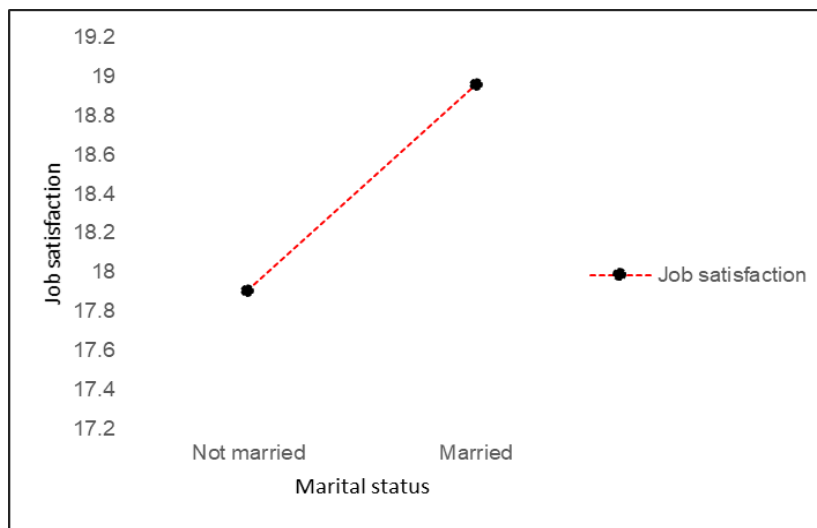


Figure 5. The relationship between marital status and job satisfaction.

The results have shown that there are no significant differences in job satisfaction considering the gender ( $t(255) = -1.39, p = .166$ ) and level of education ( $F(4,254) = .40, p = .807$ ) of healthcare workers.

## **DISCUSSION**

This study aimed to investigate whether there are differences in healthcare workers' overall job satisfaction depending on their socio-demographic characteristics. The obtained results have shown the significant differences in healthcare workers' overall job satisfaction depending on their socio-demographic characteristics: age, duration of service, income, work in shifts, and marital status.

Regarding age, healthcare workers aged 31 to 40 years show the least overall job satisfaction level, while healthcare workers aged 51 and more years show the highest overall job satisfaction level. Some other researchers (Carrilo-Garcia, Solano, Martiney-Roche, & Gomey-Garcia, 2013; Lopez, Bernal, & Canovas, 2001) have shown similar results concerning the oldest examinees, and also find that besides the eldest, the youngest examinees are satisfied with their job, comparing to middle age groups, in job satisfaction. Studies of job satisfaction of nurses in different countries have shown that elderly nurses report higher levels of job satisfaction (Duffield, Roache, O'Brien-Pallas, Catling-Paull, & Kong, 2009; Al-Hussami, 2008; Li, & Lambert, 2008; Shields, & Ward, 2001; Wade et al., 2008). The reason for this may be that elderly employees have resolved their personal and professional development issues and achieved levels of satisfaction with themselves and their contributions to the profession.

As for service duration, healthcare workers with less than 10 years of service show the least overall job satisfaction level, while healthcare workers with 31 and more years of service show the highest overall job satisfaction level. The reason for the obtained results can be found in the fact that employees with longer work experience, even if they were initially dissatisfied with the job, due to cognitive dissonance, over time become more satisfied with their job. By staying in a certain job, a person becomes more efficient in doing work, which in part leads to greater job satisfaction. Part of the explanation lies in the rationalization of staying at work, which is manifested through acceptance and convincing ourselves that we love that job (Mirković, & Franceško, 2008). Olatunji, Mokuolum, & Bolade (2014) are also found that job satisfaction increases with tenure of service. Kavanaugh, Duffy and Lilly (2006) point out that professional experience is a demographic variable that is strongest related to the job satisfaction of healthcare workers, and they found that healthcare workers with 6 to 15 years of duration of service are least satisfied with their job. They believe that the relative dissatisfaction with the job is attributable to career plateau effects.

Considering the income, healthcare workers who are extremely dissatisfied with income have shown the least overall job satisfaction. Healthcare workers who are mostly satisfied with income have shown the highest overall job satisfaction. Numerous previous studies conducted on a sample of employees from different professions (Clark, & Oswald, 1996; Lu et al., 2016) and a sample of healthcare workers (Lalitha et al., 2019) indicate the same trend.

When it comes to working in shifts, healthcare workers working in shifts have shown lower job satisfaction than healthcare workers who do not work in shifts. Having in mind that work in shifts significantly interferes with the family and social life of an individual, and also can result in health problems and occupational diseases (Petz, 1987), the obtained result is logical and expected. The results of previous studies also confirm our results. Thus, for example, Haas, Nielsen, Kristensen and Bast Pettersen (2016) have found that nurses who work shifts reporting lower levels of job satisfaction and higher levels of mental distress.

As for marital status, unmarried healthcare workers have shown lower job satisfaction than married healthcare workers. The results follow the general trend between marital status and job satisfaction (Mirković, & Franceško, 2008). They can be explained by the spill-over effect, meaning that marital status positively impacts overall life satisfaction, which then spills over to job satisfaction (Mirković, & Franceško, 2008). As for marital status, unmarried healthcare workers have shown lower job satisfaction than married healthcare workers. The results follow the general trend between marital status and job satisfaction (Mirković, & Franceško, 2008). They can be explained by the spill-over effect, meaning that marital status positively impacts overall life satisfaction, which then spills over to job satisfaction (Mirković, & Franceško, 2008). Similarly,

Olatunji, Mokulu and Bolade (2014) point out that a married worker's emotional support derives from the spouse may douse the tension from the job, which may not be available to single workers.

Finally, the present study has two limitations. First, our sample most probably is not representative because the study used a convenience sampling method. Second, the we used a measure of overall job satisfaction. Therefore, future research should examine satisfaction with certain aspects of the job so that more specific measures can be created to increase job satisfaction for healthcare workers.

## CONCLUSIONS

In conclusion, this study's results have shown that age, duration of service, income, and work in shifts are significant determinants of healthcare workers job satisfaction. The results suggest that intervention programs aimed to increase healthcare workers job satisfaction should primarily target healthcare workers aged 31 to 40 years, healthcare workers with less than 10 years of service, healthcare workers who are extremely dissatisfied with income, and healthcare workers working in shifts. However, to make the interventions as effective as possible, it is necessary to examine what aspects of the job these categories of healthcare workers are not satisfied with to work on their improvements.

## LITERATURE

- Al-Hussami, M. (2008). A Study of Nurses' Job Satisfaction: The Relationship to Organizational Commitment. Perceived Organizational Support. *Transactional*, 22, 286-295.
- Alves, P. C., Neves, V. F., Dela, M. F., Oliveira, A. F. (2012). Evaluation of well-being at work among nursing professionals at a University Hospital. *Revista Latino-Americana de Enfermagem*, 20(4), 701-709.
- Bovier, P. A. (2001). Predictors of work satisfaction among physicians. Eur J Public Health caring attributes of managers on nurses' job enjoyment. *Journal of Advanced Nursing*, 64(4), 344—353.
- Carrillo-García, C., del Carmen S. L. M., Martínez-Roche, M. E., & Gómez-García, C. I. (2013). Job satisfaction among health care workers: The role of gender and age. *Revista Latino-Americana de Enfermagem*, 21(6), 1314–1320.
- Clark, A.E., & A.J. Oswald (1996): Satisfaction and Comparison Income. *Journal of Public Economics*, 61, 359-381.
- Coomber B., & Barribal K. L. (2007). Impact of job satisfaction components on intent to leave and turnover for hospital-based nurses: A review of the research literature. *Int J Nurs Stud*. 44, 297–314.
- Duffield, C., Roche, M. A., Diers, D., Catling-Paull, C., & Blay, N. (2010). Staffing, skill mix and the model of care. *Journal Of Clinical Nursing*, 19(15-16), 2242-2251.
- Faragher, E. B., Cass, M. & Cooper, C. L. (2005). The Relationship Between Job Satisfaction and Health: A Meta-Analysis. *Occupational and Environmental Medicine*, 62(2), 105-112.
- Freeborn, D.K. (2001). Satisfaction, commitment, and psychological well-being among HMO physicians. *Western Journal of Medicine*, 174, 13–18.
- Gechman, A. S., & Wiener, Y. (1975). Job involvement and satisfaction as related to mental health and personal time devoted to work. *Journal of Applied Psychology*, 60(4), 521–523.
- Grinberg, B. (1998). *Ponašanje ljudi u organizacijama*. Želnid. Beograd.
- Haas, J. S., Cook, E .F., Puopolo, A. L., Burstin, H. R., Cleary, P. D., & Brennan, T. A. (2000). Is the professional satisfaction of general internists associated with patient satisfaction?. *Journal of General Internal Medicine*, 15, 122-58.
- Haas, Y. M., Nielsen, M. B., Kristensen, P., & Bast-Pettersen, R. (2016) Shift work, mental distress and job satisfaction among Palestinian nurses. *Occupational Medicine*, 67(1), 71–74.
- Judge, T. A. Thoresen, C. J., Bono, J. E. & Patton, G. K. (2001). The job satisfaction job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, 127(3), 376-407.

- Kavanaugh, J., Duffy, J. A., & Lilly, J. (2006). The relationship between job satisfaction and demographic variables for healthcare professionals. *Management Research News*, 29(6), 304-325.
- Kavita, B. & Kalpanan, S. (2012). Job satisfaction in health-care organizations. *Industrial Psychiatry Journal*, 21(1), 75-78.
- Khosravi, M., & Kasaeiyan, R. (2019). The predictive role of socio-demographic characteristics, job stress and psychological hardiness in job satisfaction of nurses. *Journal of Advanced Pharmacy Education and Research*, 9, 174-178.
- Kivimaki, M., Kalimo R., & Lindstrom K. (1993). Contributors to satisfaction with management in hospital wards. *Journal of Nursing Management*, 2, 229-234.
- Kohler, S. S., & Mathieu, J. E. (1993). Individual characteristics, work perceptions, and affective reactions influences on differentiated absence criteria. *Journal of Organizational Behavior*, 14, 515-530.
- Koys, D. J. (2001). The effects of employee satisfaction, organizational citizenship behavior, and turnover on organizational effectiveness: A unit-level, longitudinal study. *Personnel Psychology*, 54(1), 101-114.
- Lalitha, M. A., Sundari, T., & Kathiravan, C. (2016). A Study on Job Satisfaction among Female Nurses. *International Journal of Engineering and Management Research*, 6(6), 103-108.
- Landy, F. J. (1989). *The psychology of work behavior* (4th ed.). Monterey, GA: Brooks/Cole
- Laschinger, H. K. S. (2012). Job and career satisfaction and turnover intentions of newly graduated nurses. *Journal of Nursing Management*, 20, 72-84.
- Li, J., & Lambert, V. (2008). Job satisfaction among intensive care nurses from the People's Republic of China. *International Nursing Review*, 55(1), 34-39.
- López, F., Bernal, L., & Cánovas A. (2001). Satisfacción laboral de los profesionales de un hospital comarcal de Murcia. *Revista de Calidad Asistencial*, 16, 243-246.
- Lu, Y., Hu X. M., Huang X. L., Zhuang, X. D., Guo, P., Feng, L. F., Hu, W., Chen, L., & Hao, Y. T. (2016). Job satisfaction and associated factors China. *BMJ Open*, 6(7), 1-9.
- Makowiec-Dabrowska, T., Koszada-Włodarczyk, W., Bortkiewicz, A., Gadzicka, E., Siedlecka, J., Jóźwiak, Z., & Pokorski, J. (2008). Occupational and non-occupational determinants of work ability. *Medycyna Pracy*, 59(1), 9-24.
- McNeely, R.L. (1988). Age and job satisfaction in human service employment. *Gerontologist*, 28, 163-168.
- Mirković, B., & Franceško, M. (2008). *Organizaciono ponašanje – moć poznavanja organizacionog ponašanja*. Banja Luka: Univerzitet za poslovni inženjering i menadžment.
- Okerlund, V. W., Jackson, P.B., & Parsons, R. J. (1994). Factors affecting recruitment of physical therapy personnel in Utah. *Physical Therapy*, 74, 177-184.
- Olatunji, S. O., & Mokuolu, B. O. (2014). The Influence of Sex, Marital Status, and Tenure of Service on Job Stress, and Job Satisfaction of Health Workers in a Nigerian Federal Health Institution, *An International Multidisciplinary Journal, Ethiopia*, 8(1), 126-133.
- Parnell, J. A., & Crandall, W. R. (2003). Propensity for Participative Decision-Making, Job Satisfaction, Organizational Commitment, Organizational Citizenship Behavior and Intentions to Leave among Egyptian Managers. *The Multinational Business Review Journal*, 11, 45-65.
- Petz, B. (1987). *Psihologija rada*. Zagreb: Školska knjiga.
- Pugh, G.L. (2016). Job satisfaction and turnover intent among hospital social workers in the United States. *Social Work in Health Care*, 55(7), 485-502.
- Reid, C., Hurst, C., & Anderson, D. (2013). Examination of socio-demographics and job satisfaction in Australian registered nurses. *Collegian*, 20(3), 161-9.
- Shields, M., & Ward, M. (2001). Improving nurse retention in the National Health Service in England: The impact of job satisfaction on intentions to quit. *Journal of Health Economics*, 20(5), 677-701.

- Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics (4th Edition)*. Boston: Allyn and Bacon.
- Tarcan, M., Hikmet, N., Schooley, B., Top, M., & Tarcan, G. Y. (2017). An analysis of the relationship between burnout, socio-demographic and workplace factors and job satisfaction among emergency department health professionals. *Applied Nursing Research, 34*, 40-47.
- Van, F. J. H., & Swaen, G. M. H. (2003). Fatigue at work. *Occupational and Environmental Medicine, 60*(1), 1-2.
- Vecchio, R. P. (1995). It's not easy being green: Jealousy and envy in the workplace. In *Proceedings Research in Personnel and Human Resources Management, 13* (pp. 201-244). Greenwich, CT: JAI Press.
- Verschuren, P. J. M. & Masselink, H. (1997). Role concepts and expectations of physicians and nurses in hospitals. *Social Science and Medicine, 45*(5), 1135-1138.
- Wade, G. H., Osgood, B., Avino, K., Bucher, G., Bucher, L., Foraker, T., French, D., & Sirkowski, C. (2008). Influence of organizational characteristics and caring attributes of managers on nurses' job enjoyment. *Journal of Advanced Nursing, 64*(4), 344-353.
- Wilson, B., Squires, M., Widger, K., Cranley, L., & Tourangeau A. (2008). Job satisfaction among a multigenerational nursing workforce. *Journal of Nursing Management, 16*, 716-23.
- Yurumezoglu, H. A., & Kocaman, G. (2012). Pilot study for evidence-based nursing management: Improving the levels of job satisfaction, organizational commitment, and intent to leave among nurses in Turkey. *Nursing Health Sciences, 14*, 221-228.