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WORK ENGAGEMENT OF HEALTHCARE WORKERS: DO THE WORK ROLE AND SOCIO-DEMOGRAPHIC CHARACTERISTICS MAKE A DIFFERENCE?

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ABSTARCT

Work engagement refers to a positive, fulfilling, and work-related state of mind characterized by vigour, dedication and absorption. This study aimed to examine whether there are differences in the work engagement of healthcare workers depending on their work role (doctor/nurse) and socio-demographic characteristics (gender, age, duration of service, work in shifts, income, marital status). The sample comprised 255 healthcare workers (74.7% female) from BIH with a mean age of 40.75 (*SD*=11.71). We used the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006). The results of ANOVA and post-hock tests showed a statistically significant difference in dedication, taking into account duration of service ($F(3,247)=2.970$, $p=.033$, ηp2=.036) and working in shifts ($F(1,249)=5.758$, $p=.017$, $\eta_p^2=.023$). Healthcare workers who have more than 26 years of service, and work in one shift, are the most prone to dedication. Besides, statistically significant difference has been determined in vigour ($F(4,246)=10.374$, $p=.000$, $\eta_p^2=.143$), dedication ($F(4,246)=10.639$, $p=.000$, $\eta_p^2=.015$) and absorption ($F(4,246)=7.542$, $p=.000$, ηp2=.109) considering income. Also, statistically significant difference has been determined in vigour ($F(1,249)=5.804$, $p=.017$, ηp2=.023), dedication ($F(1,249)=5.904$, $p=.016$, $\eta_p^2=.023$) and absorption ($F(1,249)=5.113$, $p=.025$, $\eta_p^2=.020$) considering marital status. Healthcare workers who are married and completely satisfied with income are the most prone to vigour, dedication and absorption. This study's findings indicate that some socio-demographic characteristics significantly determine healthcare workers' work engagement.

Keywords: work engagement, work role, socio-demographic characteristics, healthcare workers.

INTRODUCTION

The first considerations about work engagement are provided by Kahn (1990), who described the concept of work engagement as an employee's commitment to their organizational role, which includes fully physically, cognitively, and emotionally connecting employees with their work roles. Schaufeli et al., (Schaufeli, Salanova, Gonza´lez-Roma, & Bakker 2002) gave the most used definition and model of work engagement. They define work engagement as a positive and fulfilling condition that refers to vigour, dedication and absorption. Vigour presents high energy levels, mental resilience during work, persistence under challenging situations, and a willingness to make an effort in a job. The dedication includes inspiration, pride, enthusiasm, significance and challenge at work. Absorption is when one feels happy, fully concentrated, and deeply immersed in work, hardly detaching from work (Schaufeli et al., 2006). Bakker and Demerouti (Bakker, & Demerouti, 2008) say that work engagement captures how workers experience their work: as stimulating and energetic and something to which they want to devote time and effort.

Work engagement has become an issue of interest in organizational psychology because it relates to different aspects of organizational prosperity. And numerous researchers have found the relationship between work engagement and, from a corporate perspective, important issues such as productivity, job satisfaction, motivation, organizational commitment, low level of turnover

intention, customer satisfaction and work performance, health, lower absenteeism and organizational and job satisfaction (Hallberg, & Schaufeli, 2006; Saks, 2006; Schaufeli, Taris, & Van Rhenen, 2008). Employees with higher levels of work engagement direct more efforts toward organizational goals (Macey, Schneider, Barbera, & Young, 2009), and they are more committed to the organization (Field, & Buitendach, 2011). Work engagement is related to in-role performance in a positive way. Employees who are engaged receive higher ratings from their co-workers for in-role and extra-role performance (Bakker, Demerouti, & Verbeke, 2004). The effects of work engagement on an individual level are significant, too. Many studies show the close connection between engagement and the general well-being of individuals (Rothbard, 2001; Salanova, Agut, & Piero, 2005) and happiness (Field, & Buitendach, 2011). Maslach and Leiter (1997) have found that work engagement is inversely proportional to burnout.

Various factors contribute to work engagement. Bakker and Demerouti (2014) say that there are mean level differences in work engagement between individuals as a function of working conditions, personal characteristics, and behavioral strategies. Organizational engagement is related to personal vision, positive moods, emotional intelligence, positive organizational support, optimism and self-efficacy (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Kolodinsky, Ritchie and Kuna (Kolodinsky, Ritchie, & Kuna, 2018), Krishnaveni and Monica (Krishnaveni, & Monica, 2016) as important drivers that contribute to work enhancement present job characteristics, rewards, positive feedback, good relationship with colleagues and supervisors, training and growth opportunities. Ancarani et al., (Ancarani, Di Mauro, Giammanco, & Giammanco, 2017) point to workplace social exchanges for work engagement, highlighting the effects of exchanges on the leader-member level and among co-workers and their interactions. A variety of studies emphasize the role of leadership, which influences employees' work engagement and personal and job resources (Breevaart, Bakker, & Demerouti, 2014; Tims, Bakker, & Xanthopoulou, 2011; Tuckey, Bakker, & Dollard, 2012). Job resources such as social support from colleagues, performance feedback, skill variety, autonomy, and learning opportunities are positively associated with work engagement (Bakker, & Demerouti, 2008; Hakanen, Bakker, & Demerouti, 2005).

Work engagement may fluctuate within persons across time and situations. Reina-Tamayo, Bakker, & Derks (2017), and Sonnentag (2003) found that workers are most engaged during requesting two-hour work episodes if workdays are preceded by evenings when workers have an excellent recovery. And during workdays, they have access to various resources (Bakker, 2014). Smulders (2006) has provided evidence that levels of engagement are higher among employees with complex, professional jobs compared to those with less skilled and autonomous jobs. He also has explored gender and age differences between employees. He didn't find gender differences. Concerning age, older workers show slightly higher levels of engagement than their younger colleagues. This finding that older employees are more engaged in work is confirmed by AON Hewitt (2013), Coetzee and De Villiers (Coetzee, & De Villiers, 2010), Drewery, Riley and Staff (Drewery, Riley, & Staff, 2008), Hoole and Bonnema (Hoole, & Bonnema, 2015), and Hornbostel, Kumar and Smith (Hornbostel, Kumar, & Smith, 2011).

Finally, it is important to note that most research in the health care sector is directed toward nursing, as nurses have the most contact with patients and hold many jobs in medical institutions. Laschinger, Wilk, Cho and Greco (Laschinger, Wilk, Cho, & Greco, 2009) said that high-quality patient care is dependent on an empowered nursing workforce. They define nurse engagement as a persistent and pervasive affective, cognitive state of mind characterized by psychological presence, energy and involvement.

As previously stated, work engagement is critical for the success of all organizations, particularly those in the healthcare sector. Topakas, Admasachew and Dawson (Topakas, Admasachew, & Dawson, 2011) confirmed that work engagement is related to hospital trusts' organizational level outcomes such as quality of services, absenteeism, patient satisfaction, and patient mortality. Ancarani et al. (2017) suggest the relevant role that social exchanges and work engagement can play in public organizations where employees must go the "extra mile", such as in hospitals. Spurgeon, Mazelan and Barwell (Spurgeon, Mazelan, & Barwell, 2011) find that high

levels of medical engagement were negatively associated with patient mortality. Therefore, this study aimed to investigate whether there are differences in the work engagement of healthcare workers from Bosnia and Herzegovina depending on their work role (nurse/doctor) and socio-demographic characteristics (gender, age, duration of service, work in shifts, income, and marital status).

METHOD

Participants and procedure

The sample consisted of 255 healthcare workers (74.9% female) from three hospitals in Bosnia and Herzegovina. 53.2% of nurses and 46.8% of doctors participated in this study. The sample was divided into four age cohorts: up to 30 years of age (25.9%), 31-40 years (27.5%), 41-50 years (21.4%), and over 51 years (25.2%). In terms of the duration of service, the sample was divided into four cohorts: up to 5 years of service (23.5%), 6-15 years (31%), 16-25 years (22%) and 26 and more years (23.5%). Considering the shifts, 54.5% were healthcare workers who work in one shift, and 45.5% worked more shifts. In terms of income, the sample was divided into five cohorts: extremely dissatisfied (12.9%), mostly dissatisfied (18.8%), neither satisfied nor dissatisfied (32.5%), mostly satisfied (33.7%), and completely satisfied (2%). For marital status, 61.6% were married, and 38.4% were not married.

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

Instruments

Utrecht Work Engagement Scale (UWES-9; Schaufeli et al., 2006). The scale consists of 9 items distributed in three subscales that measure Vigour, Dedication and Absorption. The participants' responses to the UWES-9 are given on a 6-point Likert scale from 0 (Never) to 6 (Always). Higher results on the scale indicate a higher level of work engagement satisfaction. For this study, the Cronbach's alpha was .86 for Vigor, .92 for Dedication, and .78 for Absorption.

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

Data analysis

In data analysis, we used the following statistical procedures: descriptive statistics, correlation analysis, Multivariate Analysis of Variance (MANOVA), Analysis of Variance (ANOVA) and post-hock tests. Data analysis was performed using the statistical software SPSS for Windows, version 25.0.

RESULTS

Table 1 presents the descriptive statistical measures and correlations for the Work Engagement Scale subscales. Measures of average and variability, skewness and kurtosis do not indicate significant deviations compared to a normal distribution (Tabachnick, & Fidell, 2001). The obtained correlations between the subscales of the Work Engagement Scale are expected (Schaufeli et al., 2006). The correlation between Vigour, Dedication and Absorption is positive and of strong intensity (Cohen, 1988).

Table 1. Descriptive statistical measures for subscales of the Work Engagement Scale.

	Min	Max	M	SD	Sk	Ku	Correlations	
							Vigour	Dedication
Vigour	0	6	3.66	1.34	-.556	.196	1.00	
Dedication	0	6	4.03	1.41	-.830	.455	.84**	1.00
Absorption	0	6	4.27	1.17	-.888	.935	.77**	.77**

** $p < .001$

The MANOVA was used to examine healthcare workers' differences in work engagement considering the work role (doctor/nurse) and socio-demographic characteristics (gender, age, duration of service, work in shifts, income, and marital status). The results (Table 2) showed a significant difference in healthcare workers' work engagement depending on work shifts and incomes.

Table 2. Multivariate differences in work engagement considering work role, gender, age, duration of service, marital status, work in shifts, and income.

	Wilks' Lambda	***F***	***df***	**Error df**	***p***	***η2***
Work role	.991	.765	3	244.000	.515	.009
Gender	1.487	1.487	3	246.000	.219	.018
Age	.959	1.122	9	589.115	.345	.014
Duration of service	.957	1.159	9	572.079	.319	.015
Work shift	.963	3.110	3	246.000	.027	.037
Income	.823	4.092	12	643.209	.000	.063
Marital status	.974	2.133	3	244.000	.097	.026

The results of the ANOVA have shown significant differences in Dedication ($F(3,247) = 2.970$, $p = .033$) considering the duration of service of healthcare workers. However, the effect size is small. The duration of service explains only 3.6% of the variance in Dedication ($\eta p^2 = .036$). The LSD post hoc test revealed that healthcare workers with 6-15 years of service show the lowest level of Dedication ($M = 4.41$, $SD = 1.95$), while healthcare workers with 26 and more years of service show the highest level of Dedication ($M = 3.71$, $SD = 1.57$). Healthcare workers with less than 5 years of service and 16-25 years of service do not significantly differ in Dedication, nor do they differ significantly in Dedication from healthcare workers with 6-15 and 26 and more years of service (Figure 1).

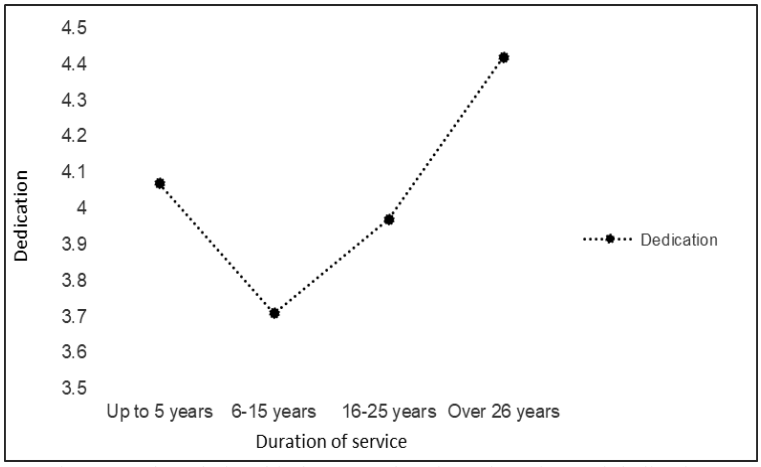

Figure 1. The relationship between duration of service and dedication.

The results of the ANOVA have shown a significant difference in Dedication ($F(1,249) = 5.758$, $p = .017$) considering the work in shifts of healthcare workers. However, the effect size is small. Working in shifts explains only 2.3% of the variance of Dedication ($\eta_p^2 = .023$). Healthcare workers who work in one shift show a higher level of Dedication ($M = 4.22$, $SD = 1.28$) than those who work more shifts ($M = 3.8$, $SD = 1.51$) (Figure 2).

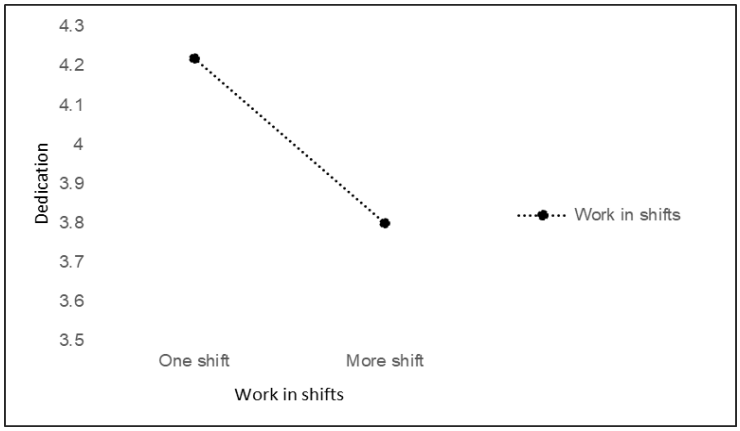

Figure 2. The relationship between work in shifts and dedication.

The ANOVA results have shown a significant difference in Vigour (F(4,246) = 10.374, p = .000), Dedication (F(4,246) = 10.639, p = .000) and Absorption (F(4,246)=7.542, p=.000) considering the income of healthcare workers. The effect size is small in the case of Dedication, medium in the case of Absorption, and large in the case of Vigour. The income explains 1.5% of the variance in Dedication (η_p^2 = .015), 10.9% of the variance Absorption (η_p^2 =.109), and 14.3% of the variance in Vigour (η_p^2 =.143). Since we have an unequal number of subjects in cells of different income, and the Levene test showed that the variances are not equal (F(4,246) = 3.76, p = .005 for Vigour, F(4,246) = 7.76, p = .000 for Dedication, and F(4,246) = 5.90, p = .000 for Absorption), we used Dunnett's C post hoc test. Results reveal that healthcare workers who are extremely dissatisfied with income show the lowest level of Vigour (M = 2.81, SD = 1.73), Dedication (M = 3.05, SD = 1.93) and Absorption (M = 3.67, SD = 1.67), while healthcare workers who are mostly satisfied with income show the highest level of Vigour (M = 4.73, SD = 1.40), Dedication (M = 4.93, SD = .98) and Absorption (M = 4.93, SD = .68). Healthcare workers who are mostly satisfied with income and completely satisfied with income do not significantly differ in Vigour, Dedication and Absorption (Figure 3).

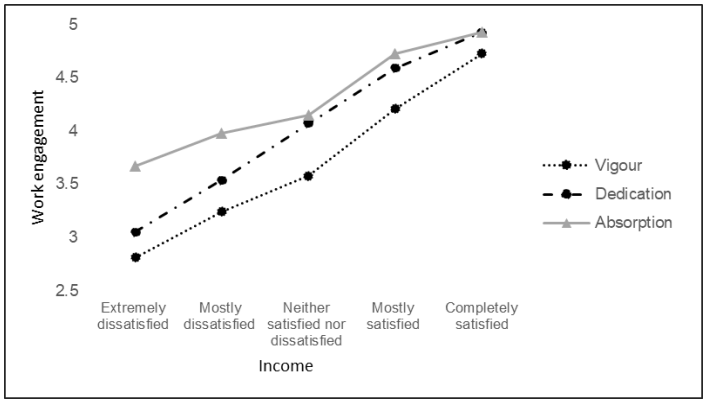

Figure 3. The relationship between income, vigour, dedication and absorption.

The results of the ANOVA have shown a significant difference in Vigour (F(1,249) = 5.804, p = .017), Dedication (F(1,249) = 5.904, p = .016) and Absorption (F(1,249) = 5.113, p = .025) considering the marital status of healthcare workers. However, the effect size is small. Marital status explains only 2.3% of the variance of Vigour (η_p^2 = .023), Dedication (η_p^2 = .023) and 2% of the variance of Absorption (η_p^2 = .020). Married healthcare workers show a higher level of Vigour (M = 3.81, SD = 1.31), than unmarried healthcare workers (M = 3.40, SD = 1.34). Also,

married healthcare workers show a higher level of Dedication (M = 4.20, SD = 1.36) than unmarried healthcare workers (M = 3.76, SD = 1.45). Finally, married healthcare workers show a higher level of Absorption (M = 4.40, SD = 1.13) than unmarried healthcare workers (M = 4.05, SD =1.22) (Figure 4).

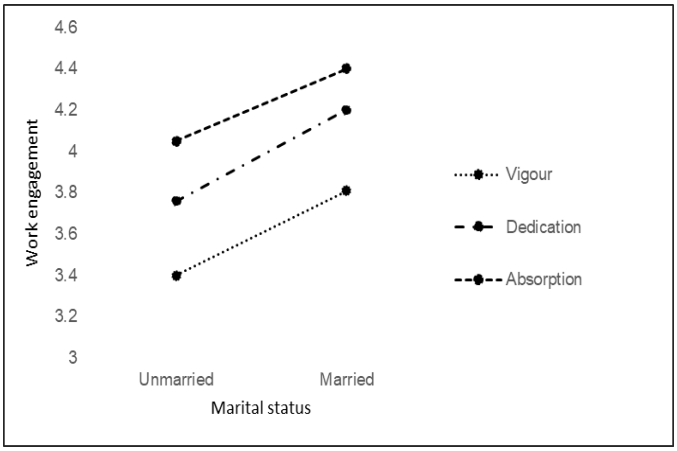

Figure 4. The relationship between marital status, vigour, dedication and absorption.

The results have shown that there are no significant differences in vigour (F(1,249) = .912, p = .340, η_p^2 = .004), dedication (F(1,249) = 0.57, p = .811, η_p^2 = .002) and absorption (F(1,249) = .361, p = .549, η_p^2 = .001) considering the work role of healthcare workers. Also, there no significant differences in vigour (F(1,249) = 1.075, p = .785, η_p^2 = .003), dedication (F(1,249) = 1.138, p = .240, η_p^2 = .005) and absorption (F(1,249) = 1.837, p = .177, η_p^2 = .007) considering the gender of healthcare workers. Finally, there are no significant differences in vigour (F(3,247) = 1.95, p = .122, η_p^2 =.023), dedication (F(3,247) = 2.46, p = .063, η_p^2 = .030) and absorption (F(3,247) = 1.55, p = .202, η_p^2 =.019) considering the age of healthcare workers.

CONCLUSIONS

This study aimed to investigate whether there are differences in healthcare workers' work engagement depending on their work role and socio-demographic characteristics. The results have shown significant differences in healthcare workers' work engagement on their socio-demographic characteristics: duration of service, income, work in shifts, and marital status. Regarding service duration, healthcare workers with 6-15 years of service show the lowest level of Dedication. In the available literature, little research examines the relationship between service duration and work engagement. Prins et al., (Prins et al., 2010) didn't find significant associations between engagement and training years or work length in their sample. But when we discuss 6-15 years of service, we have to consider that those are younger employees, and many kinds of research confirmed a positive correlation between work engagement and age (Coetzee, Coetzee, & De Villiers, 2010; Drewery al al., 2008; Hoole, & Bonnema, 2015; Hornbostel, et al., 2011; Simpson, 2009). Wissing and Eeden (2002) have found that the Baby boomers generation obtained the highest levels of work engagement. The quality of engagement in our study differs in dimensions compared to other studies conducted on a sample of nurses. Wonder (2009), Gursoy, Maier, & Chi, (2008), found a significant difference in vigour by generation. Gursoy et al., 2008 consider that the difference in vigour is caused by the willingness of the Baby Boomer generation to give efforts at work, considering that this generation has been recognized to "live to work". Leiter, Jackson and Shaughnessy (Leiter, Jackson, & Shaughnessy, 2009) think that current organizational structures are created in a way that reflects the Baby Boomer generation's values more than other generations. Glass (2007) explains the differences between generations by different generational experiences that impact behaviour.

As for work in shifts, healthcare workers who work more shifts show the lowest level of Dedication. Studies confirm the relationship between work engagement in all dimensions and work in shifts. Statistics in the Netherlands (CBS) have reported that shift work schedules are becoming significant sources of distress for nurses, displacing other important factors and causing low engagement of 8–11% in the Dutch labour force. Efinger, Nelson and Starr (Efinger, Nelson, & Starr, 1995) confirmed that prolonged shiftwork, especially night shiftwork, presents a health risk and produces symptoms that closely respond to mild or moderate distress and low engagement. Roelant, Clarke, Meuleman, Van Bogaert and Van de Heyning (Roelant, Clarke, Meuleman, Van Bogaert, & Van de Heyning, 2010) say that high and prolonged workloads were related to nurses' decreased adequacy and efficacy, complains of fatigue, headache and affects nurses' feelings of frustration and low engagement. These feelings could impact the individual nurse and the whole team. Hoonakker, Carayon and Walker (Hoonakker, Carayon, & Walker, 2011) have found a statistically significant difference between employees' satisfaction with sleeping hours and engagement, energy level, and end work efficacy. Considering the income, healthcare workers who are highly dissatisfied with income show the lowest level of Vigour, Dedication and Absorption. This result is in line with other findings. Hoonakker et al. (2011) also showed that employees satisfied with income were more engaged and had better results on energy and efficacy scales. Regarding marital status, unmarried healthcare workers have shown lower Vigour, Dedication and Absorption. Some older research findings and some new (Shukla, Adhikari, & Singh, 2015; Maslach, & Jackson, 1981; Keller, 1983; Wild, 1970) also showed that single employees show low levels of engagement compared to employees with life partners. Some studies in different sectors (Burke, Koyuncu, Fiksenbaum, & Tekin, 2013; Kim, Shin & Swanger, 2009; Pitt Catsouphes, & Matz-Costa, 2008; Zengn, Zhou, & Han, 2009) didn't confirm the significant correlation between marital status and work engagement, while Kong (2009) reported considerably higher levels of work engagement among single employees when compared to employees with partners. Finally, the present study has several limitations. First, the study used the convenience sampling method. Our sample probably is not representative. There may be differences in socio-demographic characteristics of the examined healthcare workers concerning the total population of healthcare workers in Bosnia and Herzegovina. Second, data were collected through the self-assessment of healthcare workers. Third, job demands and job resources are significant determinants of health workers' work engagement, such as work overload, emotional and mental demands, red tape, coworker support, supervisor support, tools, performance feedback, opportunities for learning, leadership etc. (D'Emiljo, & Du Preez, 2017; Engelbrecht, Ray, Nel, & Wilke, 2019; Macauley, 2015; Seada, 2017), were not included in this research. Therefore, future research should examine their contribution to the health workers' work engagement.

In conclusion, this study's results have shown that duration of service, work in shifts, income, and marital status are significant determinants of health workers' work engagement. The results suggest that intervention programs to increase health workers' work engagement should primarily target healthcare workers with 6-15 years of service, healthcare workers who work more shifts, healthcare workers who are highly dissatisfied with income, and unmarried healthcare workers.

LITERATURE

Ancarani, A., Di Mauro, C., Giammanco, M. D., & Giammanco, G. (2017). Work engagement in public hospitals: a social exchange approach. *International Review of Public Administration*, 1-19.

AON Hewitt. (2013). *2013 trends in global employee engagement*. Retrieved February 14, 2014, from http://www.aon.com/forms/2013/AH_trends-employee-engagement.html

Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. *Career Development International, 13,* 209–223.

Bakker, A.B, Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and Work Engagement: The JD–R Approach. *Annual Review of Organizational Psychology and Organizational Behavior, 1*(1), 389-411.

Bakker, A.B. (2014). Daily Fluctuations in Work Engagement: An Overview and Current Direction. *European Psychologist, 19*(4), 227-236.

Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the Job Demands-Resources model to predict burnout and performance. *Human Resource Management, 43,* 83–104.

Breevaart, K., Bakker, A., & Demerouti, E., (2014). Daily self-management and employee work engagement. *Journal of Vocational Behaviour, 84,* 31-38.

Burke, R. J., Koyuncu, M., Fiksenbaum, L. & Tekin, Y. (2013). Antecedents and consequences of work engagement among frontline employees in Turkish hotels. *Journal of Transnational Management, 18*(3), 191-203.

Coetzee, M., & De Villiers, M. (2010). Sources of job stress, work engagement and career orientations of employees in a South African financial institution. *South African Business Review*, *14*(1), 27–58.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd Edition).* Hillsdale, NJ: Erlbaum.

D'Emiljo, A., & Du Preez, R. (2017). Job demands and resources as antecedents of work engagement: A diagnostic survey of nursing practitioners. *Africa Journal of Nursing and Midwifery, 19*(1), 69–87.

Drewery, K., Riley, A., & Staff, H. (2008). *Gen up – How the four generations work*. Retrieved February 15, 2014, from http://www.cipd.co.uk/NR/rdonlyres/25DA52DE-F120- 4579-AFE3-564C8801425D/0/genuphowfourgenerationswork.pdf

Efinger, J., Nelson, L. C., & Starr, J. M. W. (1995). Understanding circadian rhythms: a holistic approach to nurse and shift work. *Journal of Holistic Nursing 13,* 306–322.

Engelbrecht, M., Ray, A., Nel, P., & Wilke, M. (2019). Emotional well-being and work engagement of nurses who moonlight (dual employment) in private hospitals. *International Journal of Nursing Practice, 26*(1), 1–9.

Field, L. K., & Buitendach, J. H. (2011). Hapiness, work engagement and organizational commitment of support staff at atertiary education institution in South Africa. *South Africa Journal of Industrial Psychology, 37*(1), 10.

Glass, A. (2007). Understanding generational differences for competitive success. *Industrial and Commercial Training*, *39*(2), 98–103.

Gursoy, D., Maier, T. A., & Chi, C. G. (2008). Generational differences: An examination of work values and generational gaps in the hospitality workforce. *International Journal of Hospitality Management, 27*(3), 448–458.

Hallberg, U., & Schaufeli, W. B. (2006). "Same same" but different: Can work engagement be discriminated from job involvement and organizational commitment?. *European Journal of Psychology, 11,* 119–127.

Hakanen, J. J., Bakker, A. B., & Demerouti, E. (2005). How dentists cope with their job demands and stay engaged: The moderating role of job resources. *European Journal of Oral Sciences, 113,* 479–487.

Hoonakker, P, Carayon, P., & Walker, J. (2011). Measuring Workload of ICU Nurses with a Questionnaire Survey: the Nasa Task Load Index (TLX). *Journal IIE transactions on healthcare systems engineering, 1*(2), 131– 43.

Hoole, C., & Bonnema, J. (2015). Work engagement and meaningful work across generational cohorts. *SA Journal of Human Resource Management, 13*(1), 1-11.

Hornbostel, B., Kumar, R., & Smith, R. (2011). *My generation*. Retrieved February 10, 2014, from http://research.microsoft.com/en-us/projects/thinkweek/fourgenerations-hornbostel_kumar_smith-july2011.pdf

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, *33*(4), 692–724. Retrieved May 20, 2022, from https://doi.org/10.5465/256287

Keller, R.T. (1983). Predicting absenteeism from prior absenteeism, attitudinal factors, and non-attitudinal factors. *Journal of Applied Psychology, 68*(3), 536–540.

Kim, H., Shin, K. & Swanger, N. (2009). Burnout and engagement: A comparative analysis using the Big Five personality dimensions. *International Journal of Hospitality Management, 28*(1), 96–104.

Kolodinsky, R. W., Ritchie, W. J., & Kuna, W. A. (2018). Meaningful engagement: Impacts of a'calling'work orientation and perceived leadership support. *Journal of Management & Organization*, *24*(3), 406–423.

Kong, Y. (2009). A study on the job engagement of company employees. *International Journal of Psychological Services, 1*(2), 65–68.

Krishnaveni, R., & Monica, R. (2016). Identifying the drivers for developing and sustaining engagement among employees. *IUP Journal of Organizational Behavior*, *15*(3), 7-15.

Laschinger, H., Wilk, P., Cho, J. & Greco, P. (2009). Empowerment, engagement and perceived effectiveness in nursing work environments: Does experience matter?. *Journal of Nursing Management, 17*(5), 636-646.

Leiter, M. P., Jackson, N. J., & Shaughnessy, K. (2009). Contrasting burnout, turnover intention, control, value congruence and knowledge sharing between Baby Boomers and Generation X. *Journal of Nursing Management, 17*(1), 100–109.

Macey, W.H., Schneider, B., Barbera, K., & Young, S.A. (2009). *Employee engagement: Tools for analysis, practice, and competitive advantage.* London, England: Blackwell.

Macauley, K. (2015). Employee engagement: How to motivate your team? *Journal of Trauma Nursing, 22*(6), 298–300.

Maslach, C., & Leiter, M.P. (1997). *The Truth About Burnout.* San Francisco: Jossey-Bass.

Maslach, C., & Jackson, S.E. (1981). The measurement of experienced burnout. *Journal of Occupational Behaviour, 2,* 99–113

Pitt-Catsouphes, M. & Matz-Costa, C. (2008). The multi-generational workforce: workplace flexibility and engagement. *Community, Work and Family, 11*(2), 215–229.

Prins, J. T., Hoekstra-Weebers, J. E., Gazendam-Donofrio, S. M., Dillingh, G. S., Bakker, A. B., Huisman, M., ... & Van Der Heijden, F. M. (2010). Burnout and engagement among resident doctors in the Netherlands: a national study. *Medical education*, *44*(3), 236-247.

Reina-Tamayo, A.M., Bakker, A.B., & Derks, D. (2017). Episodic demands, resources, and engagement: an experience-sampling study. *Journal of Personnel Psychology, 16*(3), 125-136.

Roelant, E., Clarke, S., Meuleman, H., Van Bogaert, P., & Van de Heyning, P. (2010). Impacts of Unit-Level Nurse Practice Environment and Burnout on Nurse-Reported Outcomes: A Multilevel Modeling Approach. *Journal of Clinical Nursing, 19,*1664–1674.

Rothbard, N. P. (2001). Enrichingordepleting? Thedynamics of engagement in work and family roles. *Administrative Science Quarterly, 46,* 655–684.

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology, 21,* 600–619.

Salanova, M., Agut, S., & Piero, J. M. (2005). Linking organizational resources and work engagement to employee performance and customer loyalty: The mediation of service climate. *Journal of Applied Psychology, 90*(6), 1217–1227.

Schaufeli, W., Salanova, M., Gonza´lez-Roma, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *The Journal of Happiness Studies, 3*(1), 71–92.

Schaufeli, W. B., & Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement, 66,* 701-716.

Schaufeli, W. B., Taris, T. W., & Van Rhenen, W. (2008). Workaholism, burnout and engagement: Three of a kind or three different kinds of employee well-being? *Applied Psychology: An International Review, 57,* 173–203.

Seada, A. M. (2017). Organizational role stress and work engagement among nurses in a selected hospital in Cairo. *American Journal of Nursing Science, 6*(1), 53–62.

Shukla, S., Adhikari, B., & Singh, V. (2015). Employee Engagement-Role of Demographic Variables and Personality Factors. *Amity Global HRM Review, 5*, 65–73.

Simpson, M. R. (2009). Predictors of work engagement among medical-surgical registered nurses. *Western Journal of Nursing Research, 31*(1), 44–65.

Smulders, P. (2006). *De bevlogenheid van werknemers gemeten [Assessing employee's work engagement]*. Hoofddorp: TNO-special september 2006.

Sonnentag, S. (2003). Recovery, work engagement, and, and proactive behavior: A new look at the interface between non-work and work. *Journal of Applied Psychology, 88*, 518–528.

Spurgeon, P., Mazelan, P. M., & Barwell, F. (2011) Medical engagement: a crucial underpinning to organizational performance. *Health Services Management Research, 24*(3), 114-20.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics (4th Edition).* Boston: Allyn and Bacon.

Tims, M., Bakker, A.B., & Xanthopoulou, D. (2011). Do transformational leaders enhance their followers' daily work engagement?. *The Leadership Quarterly, 22*(1), 121-131.

Topakas, A., Admasachew, L., & Dawson, J. (2011). *Outcomes of staff engagement in the NHS: a trust level analysis.* Birmingham, UK: Aston University.

Tuckey, M.R., Bakker, A.B., & Dollard, M.F. (2012). Empowering leaders optimize working conditions for engagement: a multilevel study. *Journal of Occupational Health Psychology, 17*(1), 15-27.

Wild, R. (1970). Job needs, job satisfaction, and job behavior of women manual workers. *Journal of Applied Psychology, 54*(2), 157–162.

Wissing, M.P., & Van Eeden, C. (2002). Empirical clarification of the nature of psychological wellbeing. *South African Journal of Psychology, 32*(1), 32–44.

Wonder, A.C. (2011). *Factors that facilitate and inhibit engagement of registered nurses: an analysis and evaluation of magnet versus non-magnet designated hospitals*. Doctorial thesis. The School of Nursing, Indiana University.

Xanthopoulou, D., Bakker, A.B., Demerouti, E., & Schaufeli, W.B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management, 14*(2), 121–141.

Zeng, H., Zhou, X., & Han, J. (2009). Employee engagement and personal performance in hotel service industry of China. *In Proceedings from 6th International conference on service systems and service management (ICSSSM)* (pp 710–715*)*. Xiamen, China.