

## Job demands, job control, and social support as predictors of job satisfaction and burnout in Croatian palliative care nurses

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The Job Demands-Control-Support (JDSC) model has seldom been tested in palliative care settings, and occupational well-being of palliative care professionals has never before been investigated in Croatia. Our aim was therefore to fill that gap by testing the JDSC model among Croatian nurses providing palliative care. More specifically, we wanted to see how job demands, job control, and social support at work affect occupational well-being outcomes (i.e. job satisfaction and burnout dimensions of exhaustion and disengagement from work) in terms of the model's iso-strain and buffer hypotheses. This cross-sectional study included 68 nurses working in various palliative care institutions across Croatia, who answered our online questionnaire. Overall, the nurses did not report high levels of burnout or low job satisfaction. The only significant effect was that of job control on job satisfaction ( $\beta=0.38$ ;  $P<0.01$ ) and disengagement ( $\beta=-0.45$ ;  $P<0.01$ ), while job demands and social support at work had a significant interaction effect on the burnout dimension of exhaustion ( $\beta=0.39$ ;  $P<0.01$ ) in the sense that high social support at work buffered the increase in exhaustion associated with high job demands. These findings suggest that interventions aimed at increasing perceived job control and social support at the workplace could improve occupational well-being of nurses working in palliative care.

KEY WORDS: JDSC; mental health; occupational well-being; work stress

There is considerable empirical evidence that nurses are exposed to more intensive stress and are more likely to develop the burnout syndrome than other health care professionals (1–3) or other professions (4).

Burnout is one of the worst consequences of exposure to chronic occupational stress in caregiving professions, as it adversely affects not only the caregivers but the receivers as well. Burnout is usually described as having three dimensions: (a) emotional exhaustion (person's feeling that his or her emotional resources are exhausted which results in fatigue, decreased enthusiasm, and irritability), (b) depersonalisation (distancing, coldness, and negative and cynical attitudes towards clients/patients), and (c) sense of diminished personal and professional accomplishment (sense of incompetence and dissatisfaction with work achievement) (5, 6). Recently, Demerouti et al. (7) redefined burnout by reducing it to only two key dimensions – exhaustion and disengagement from work – as they consider personal accomplishment to poorly correlate with the other two dimensions. As the result of intensive occupational stress, exhaustion covers various aspects besides the emotional, while disengagement from work is broader than depersonalisation, which refers primarily to a person's relationships with clients/patients. This is why we adopted this new definition of burnout in this study.

Besides burnout and related mental health problems such as anxiety or depression (8), other serious negative consequences of nurses' prolonged exposure to intensive stressors at work are decreased job satisfaction and high turnover intention. They can all incur additional cost to health organisations and compromise the quality of health care (2, 9–12). Job satisfaction is recognised as crucial in nurses' retention and low turnover intention (13). For the purpose of this study, job satisfaction is defined as a general, unidimensional construct or as “a positive (or negative) evaluative judgment one makes about one's job or job situation” (14).

Palliative care is a particularly demanding work environment for nurses due to prolonged exposure to patient suffering, pain, and death and to the grieving of family members. Palliative care profession is generally considered as highly stressful and subject to burnout, and nurses are considered to be in greater risk of developing the burnout syndrome and suffering other adverse health and well-being consequences than other palliative care professionals (15–18).

Even though empirical research in palliative care has been increasing recently (11, 18–27), most of it is limited by similar methodological constraints, such as relatively small participant samples, low response rates, and cross-sectional research design. It is often pointed out that burnout, decreased job satisfaction, high turnover (11, 26, 28), and other negative outcomes are common among nurses and other health professionals in palliative care setting, but

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there is little empirical evidence to support these statements. Quite the opposite, most research still shows that palliative care professionals, including nurses, experience similar or even lower levels of stress and burnout than health professionals working in other settings (for review see 15, 29–31). According to a recent systematic review with meta-analysis by Gómez-Urquiza et al. (15), the prevalence of different burnout dimensions among palliative care nurses is between 24 % and 30 %. These are mainly associated with occupational (workload, work environment, relations with patients and family) and psychological factors (personality traits such as extroversion and neuroticism, meaning in life).

The most commonly used model in studying the effects of occupational stress on workers' health and occupational and general psychological well-being is a Job Demands-Control-Support (JDCS) model (32, 33). In palliative care settings, however, it has seldom been applied (21, 34). It explains the impact of three key job dimensions, i.e. job demands (e.g. time pressure, conflicting roles, complexity of working tasks), job control (e.g. decision authority, skill utilisation), and social support from coworkers and supervisors. According to the model's *iso-strain hypothesis*, employee's well-being is worst affected by a combination of high job demands, low job control, and low support (additive effect). The model's *buffer hypothesis*, in turn, predicts that higher social support and job control can moderate the negative impact of high job demands on employee's well-being (buffering/interactive effect). Many review articles have tested both hypotheses (35–37), but empirical evidence speaks in favour of the *iso-strain hypothesis* in the sense that the buffering effect of high social support and job control has not always been confirmed.

### Study aims

The main aim of this cross-sectional study was to test how and to what extent job demands, job control, and social support from coworkers and supervisors would explain various aspects of occupational well-being, i.e. job satisfaction and burnout dimensions, in a sample of Croatian nurses providing palliative care. For the conceptual framework we used the JDCS model to see how the two hypotheses would fare in our sample. In accordance to the *iso-strain hypothesis*, we assumed that high job demands, low job control, and low social support would additively contribute to low job satisfaction and high exhaustion and disengagement from work as burnout dimensions. In accordance to the *buffer hypothesis*, we assumed that high levels of job control and social support would buffer, i.e. decrease, the negative impact of high job demands.

According to some estimations of ten years ago (38), Croatia was among the least developed EU countries in terms of palliative medicine. Since the recent adoption of an improved legal framework and development guidelines,

it has seen a significant progress in palliative care, but to the best of our knowledge, this is the first study conducted among palliative care professionals in Croatia.

## PARTICIPANTS AND METHODS

The study included 68 nurses (65 women and 3 men), who were part of a larger convenience sample of professionals of different profiles working in palliative care. Their average age was 41.5 years (SD=11.20; range: 21–65 years) and work experience in nursing 19 years and 10 months (SD=11.19 years; range: 1.3–41 years), while their average work experience in palliative care was 4 years and 2 months (SD=6 years; range: 2 months–33.4 years). Forty-three reported to have a bachelor's degree in nursing, while the rest completed high school. Forty-three claimed to have completed additional training in palliative care. Forty-six were married at the time of the survey, and 56 had children.

### Data collection

The data presented in this paper were collected with an online questionnaire as part of a larger study on the challenges of work in palliative care setting in Croatia, which included various professionals (nurses, physicians, physiotherapists, psychologists, social workers, and priests) working in palliative care. We sent out e-mails with a description of the research, link to the questionnaire, and an invitation to participate to all known institutions and facilities providing palliative care in Croatia and to the members of the Centre for Palliative Medicine, Medical Ethics, and Communication Skills (CEPAMET) and asked them to forward the information and the questionnaire link to employees who work in palliative care. We also explained research aims and methods to the heads of most of these institutions in person or over the phone in advance.

As we did not have accurate figures about how many palliative care nurses there were in Croatia, we could not rely on probabilistic sampling but resorted to convenience sampling instead. In addition, we did not want to limit participation by setting a minimal work experience in palliative care. The only condition for participation was that participants had been working in palliative care at the time of the study.

The participants were informed that participation was voluntary and anonymous, with no possibility to link answers to e-mail addresses or participants' identities. The study was approved by the Ethics Committee of the Zadar University Department of Psychology. Answers were collected from October 2018 to February 2019.

### JDCS model measures

*Job demands* were measured with the Croatian translation of the short version of the Nursing Stress Scale (NSS) (10) adapted from the original 34-item NSS scale (39). It consists of five subscales most closely related to the

demands and stressors in palliative care setting, as follows: *work load* (five items, e.g. *Not enough time to provide emotional support to the patient*), *conflict* (four items, e.g. *Conflict with physician*), *uncertainty regarding patient treatment* (four items, e.g. *Not knowing what a patient or a patient's family ought to be told about the patient's condition and treatment*), *dealing with death and dying* (three items, e.g. *Watching a patient suffer*), and *inadequate preparation* (three items, e.g. *Feeling inadequately prepared to help with emotional needs of patient*). Each item is scored on a four-point scale, from *never* (score 1) to *very often* (score 4), and the job demands measure is calculated as the average of the sum of scores for each subscale.

*Job control* was measured with the Job Control Subscale (40) from the Croatian adaptation of Karasek's Job Content Questionnaire (JCQ) (41). The subscale contains five statements (e.g. *I have a complete control in doing my job*), and answers range from *strongly disagree* (score 1) to *strongly agree* (score 7). The total score is the average of scores for all five items.

*Social support from coworkers and supervisors* was measured with the subscale assessing lack of support, taken from the short version of the revised NSS (10). This subscale consists of three items (e.g. *Lack of opportunity to share experiences and feelings with other personnel in the unit*) and answers vary from *never* (score 1) to *very often* (score 4). For the purpose of this study, the lack of support subscale's total score was inverted and reformulated in terms of social support at work.

#### Occupational well-being measures

Job satisfaction was measured with the Job Satisfaction Scale (42), which consists of five items (e.g. *I feel satisfied with my present job*) and scoring reflects the degree of agreement with each statement on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The total score is the average of sums of all five statements. Higher score indicates higher job satisfaction.

Burnout was assessed with the Croatian translation (43) of the Oldenburg Burnout Inventory (44). It consists of 16 items across two subscales of eight, one assessing *exhaustion* (e.g. *After my work, I usually feel worn out and weary*) and the other *disengagement from work* (e.g. *It happens more and more often that I talk about my work in a negative way*). Scores range from 1 (*strongly disagree*) to 4 (*strongly agree*), and the total of each subscale is the average of the sums of eight items. Higher score indicates higher exhaustion or higher disengagement.

## RESULTS

Table 1 shows the mean scores for all variables and their correlations. All the scales showed acceptable to good reliability (see Cronbach's alpha). Job demands were not rated as very stressful, while job control and social support were estimated as quite high. Participants also reported rather high job satisfaction while exhaustion and disengagement (burnout dimensions) were below scale average.

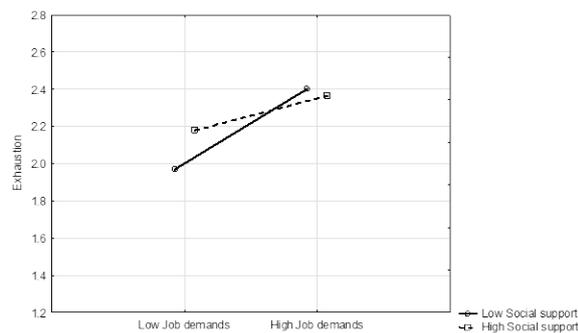
The correlations between JDCS variables and between occupational well-being variables (job satisfaction and the burnout variables) were significant, moderately high, and as expected. So were some of the correlations between the JDCS variables and the occupational well-being variables (e.g. between job demands and exhaustion or disengagement or between job control and satisfaction), while others were not significant.

To test the JDCS model hypotheses, we ran three hierarchical regression analyses by regressing job satisfaction, exhaustion, and disengagement against job demands, job control, and social support (Table 2). Job demands, control, and social support were entered in the first step, two-way interactions in the second step, and three-way interactions in the third step of regression analyses. We did not control for the background variables (age, marital and parental status, education, or work experience) for two reasons: first, in earlier analyses these

**Table 1** JDCS and occupational well-being scores by palliative care nurses, internal consistency (Cronbach's alpha), and Pearson's correlations between variables (N=68)

Variables	Mean	SD	Range	$\alpha$	1	2	3	4	5
<b>JDCS variables</b>									
(1) Job demands	2.23	0.55	1.05–4.00	0.91	---				
(2) Job control	25.89	5.54	10–35	0.82	-0.57**	---			
(3) Social support	3.00	0.76	1.00–4.00	0.78	-0.72**	0.31*	---		
<b>Occupational well-being variables</b>									
(4) Job satisfaction	3.89	0.60	2.00–5.00	0.81	-0.16	0.32**	0.22	---	
(5) Exhaustion	2.27	0.47	1.25–3.25	0.76	0.28*	-0.35**	-0.15	-0.52**	---
(6) Disengagement	1.95	0.50	1.00–3.37	0.81	0.28*	-0.45**	-0.22	-0.65**	0.72**

\* $P < 0.05$ , \*\* $P < 0.01$



**Figure 1** Interaction effect of job demands and social support on exhaustion

variables did not show any significant role in various aspects of occupational well-being of palliative care nurses (45) and, second, there would have been too many predictors in regression analyses for such a small sample.

The only significant effects we established were those of job control on job satisfaction and disengagement and of job demands and social support on exhaustion. Higher levels of control correlated with higher levels of job satisfaction and lower levels of disengagement from work.

Figure 1 shows that exhaustion in nurses who perceive low social support at work increases with job demands, yet

this increase is significantly less pronounced when social support is high.

We found no evidence of a three-way interaction with JDACS dimensions. The proportion of explained variance of various occupational well-being outcomes in the final step of the analyses was low (9 % for job satisfaction, 11 % for exhaustion, and 18 % for disengagement), which suggests that factors besides those included in this study may explain occupational well-being of nurses providing palliative care.

## DISCUSSION

Our findings only partly confirm both hypotheses, as the only job aspect that significantly contributed to occupational well-being, more precisely to job satisfaction and disengagement, was job control. The importance of job control for occupational and personal well-being and health has been evidenced by numerous studies testing the JDACS model in different professional settings, including nursing (35–37, 46–48) and palliative care context (21, 34).

In addition, our two-way interaction analysis shows that social support at work buffers the adverse effect of job demands on exhaustion. This protective role of social support from coworkers and supervisors against the burnout syndrome and other negative consequences in the nursing

**Table 2** Hierarchical regression analyses of JDACS variables and their two-way and three-way interactions as predictors of job satisfaction, exhaustion, and disengagement in palliative care nurses (N=68)

	Job satisfaction	Exhaustion	Disengagement
Predictors	$\beta$ ( $\beta$ )	$\beta$ ( $\beta$ )	$\beta$ ( $\beta$ )
<i>Step 1:</i>			
Demands	0.27 (0.18)	0.17 (0.29)	-0.06 (0.00)
Control	0.38** (0.34)	-0.27 (-0.32)	-0.45** (-0.40**)
Social support	0.29 (0.22)	0.06 (0.06)	-0.12 (-0.03)
$R^2$	0.14*	0.13*	0.21***
Adj $R^2$	0.10*	0.09*	0.17***
$F$ (3,64)	3.57*	3.23*	5.61**
<i>Step 2:</i>			
Demands x Control	0.02 (0.01)	0.08 (0.06)	0.06 (0.09)
Demands x Social support	-0.32 (-0.35)	0.39** (0.31)	0.30 (0.42)
Control x Social support	-0.28 (-0.27)	0.35 (0.37)	0.21 (0.18)
$\Delta R^2$	0.04	0.06	0.04
$R^2$	0.18*	0.19*	0.25**
Adj $R^2$	0.10*	0.11*	0.17**
$F$ (6,61)	2.25*	2.39*	3.33**
<i>Step 3:</i>			
Demands x Control x Social support	-0.08 (-0.08)	-0.20 (-0.20)	0.27 (0.27)
$\Delta R^2$	0.00	0.01	0.02
$R^2$	0.18	0.20	0.26**
Adj $R^2$	0.09	0.11	0.18**
$F$ (7,60)	1.92	2.15	3.08**

\* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ , ( $\beta$ ) -  $\beta$  coefficient at the final step

profession has been well documented (24, 49). Nursing requires good cooperation and teamwork (50), especially in demanding work settings such as palliative care.

Our three-way interaction analysis of JDCS aspects did not reveal any effect on either job satisfaction or the burnout dimensions. Other studies have shown good support for the iso-strain hypothesis, which predicts the worst well-being and health outcomes for employees in various occupations, including nursing, who experience high job demands, low control and low support at work, while there is only scarce evidence for the interactive influence of JDCS dimensions, i.e. for the buffer effect of job control and social support at work (35–37).

The shortcomings of this study are primarily related to the small convenience sample, which is the consequence of poor response rate, a common problem in this field of research. Small sample size entails small statistical power, and many regression coefficients that were slightly below the significance level would probably turn out to be significant in larger sample.

We should also take into account bias, as nurses who agreed to participate were generally satisfied with their job, and nurses who did not participate may have perceived their work as highly stressful (non-response bias).

The additional problem could be that JDCS components are too broad in concept to be specific enough for palliative care nursing. Future research in palliative care nursing could therefore benefit from tailoring the all too general JDCS model to accommodate variables and measures that better reflect the specifics of palliative care nursing. Future research should also take into account individual characteristics (e.g. resilience, spirituality, finding meaning in death, coping mechanisms), which may help to understand the impact of stress in palliative care on nurses' mental health and well-being.

Despite its limitations, this is the first empirical research in Croatia addressing the challenges of work in palliative care setting. Consistent with some earlier findings (15, 29, 31), it shows rather high levels of occupational well-being (i.e. quite high job satisfaction and rather low levels of exhaustion and disengagement) in Croatian palliative care nurses. However, further research on the mental health and occupational well-being of palliative care nurses is needed to verify these findings.

To conclude, the results of our study have confirmed the significant effect of job control on job satisfaction and disengagement and significant buffer effect of social support at work, which can lower the negative impact of job demands on occupational well-being outcomes in nurses providing palliative care. Therefore, practical interventions should focus on strengthening supportive interpersonal relations at work and enhancing perceived job control among nurses by letting them to participate more in decision-making about the organisational aspects of the job and patient treatment.

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#### Conflicts of interest

None to declare.

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### Zahtjevi i kontrola posla te socijalna podrška kao prediktori zadovoljstva i izgaranja na poslu medicinskih sestara/tehničara zaposlenih u području palijativne skrbi u Hrvatskoj

Ispitivanja Modela zahtjeva-kontrole posla-socijalne podrške (JDACS) u kontekstu palijativne skrbi doista su rijetka. Uz to, nedostaju istraživanja profesionalne dobrobiti zaposlenih u području palijativne skrbi u Hrvatskoj. Stoga je cilj ovoga istraživanja bio testirati JDACS model među hrvatskim medicinskim sestrama/tehničarima zaposlenima u području palijativne skrbi. Točnije, pokušali smo provjeriti kako zahtjevi i kontrola posla te socijalna podrška na radnome mjestu utječu na profesionalnu dobrobit (tj. zadovoljstvo poslom i dimenzije izgaranja – iscrpljenost i otuđenost) u kontekstu tzv. *iso-strain* i *buffer* hipoteza. U presječnom istraživanju sudjelovalo je 68 medicinskih sestara/tehničara zaposlenih u različitim institucijama koje pružaju palijativnu skrb u Hrvatskoj. Podatci su prikupljeni ispunjavanjem *online* upitnika. Ukupno gledano, medicinske sestre/tehničari nisu izvijestili o visokim razinama profesionalnog izgaranja ili o niskom zadovoljstvu poslom u području palijativne skrbi. Rezultati su potvrdili značajan učinak kontrole posla u objašnjenju zadovoljstva poslom ( $\beta=0,38$ ;  $P<0,01$ ) i otuđenosti ( $\beta=-0,45$ ;  $P<0,01$ ), a zahtjevi posla i socijalna podrška na poslu pokazali su značajan interakcijski učinak na iscrpljenost kao dimenziju izgaranja ( $\beta=0,39$ ;  $P<0,01$ ) na način da visoka socijalna podrška usporava porast iscrpljenosti povezane s visokim zahtjevima posla. Rezultati ovoga istraživanja impliciraju da bi intervencije usmjerene na povećanje percipirane kontrole posla i socijalne podrške na radnome mjestu mogle poboljšati profesionalnu dobrobit medicinskih sestara/tehničara zaposlenih u palijativnoj skrbi.

KLJUČNE RIJEČI: JDACS model; mentalno zdravlje; profesionalna dobrobit; radni stres