

Psychosocial Environment, Burnout and Work Wellness among Physicians: Testing the Health Impairment Process of the Job Demands-Resources Theory

Tahira Mubashar¹ and Sumaira Rafique²

Abstract

Physician wellness is complex and multifaceted; individual, professional, and organizational factors might affect it. The demanding nature of the healthcare profession places physicians at an increased risk of burnout, adversely affecting their well-being and the quality of patient care. The present research investigates the intricate relationship between psychosocial demands, burnout, and work wellness in physicians, utilizing the framework of the Job Demands-Resources Theory. Specifically, the study aims to test the Health Impairment Process, examining how psychosocial demands within the healthcare profession may lead to burnout and subsequently impact overall work wellness among physicians. The sample consisted of 251 medical doctors ($n = 102$ women, $n = 149$ men). Copenhagen psychosocial questionnaire (COPSOQ; Psychosocial Department, National Institute of Occupational Health, Copenhagen, Denmark, 1997), Oldenburg burnout inventory (OLBI; Demerouti, Bakker, & Nachreiner, 1998), and the perceived wellness survey (PWS; Adams et al., 1997) were used for assessment of study variables. Pearson product-moment correlation revealed a positive relationship between psychosocial demands and burnout whereas psychosocial demands and burnout were negatively related to the well-being of physicians. Further, the model testing analysis showed that burnout mediates the relationship between psychosocial demands and diminished work wellness among physicians. The empirical support for the health impairment process underscores the need for targeted interventions addressing psychosocial demands to mitigate burnout and enhance overall work wellness. By pinpointing specific stressors and their impact on physicians, this study offers valuable insights for developing evidence-based strategies to promote a healthier work environment in the medical field.

Keywords: psychosocial demands, burnout, work wellness, physicians, job demands-resources theory

¹Dr. Tahira Mubashar, Post Doc Researcher, Medical School Hamburg, Germany and Lecturer, Institute of Applied Psychology, University of the Punjab, Lahore, Pakistan. **Corresponding Author:** mubashar.tahira@gmail.com

²Sumaira Rafique, Clinical Psychologist, Independent Learning Centre, Saudi Arabia

1. Introduction

According to the WHO, one of the biggest current challenges is improving the health of workers and managing the psychosocial factors in the work environment (Dutheil et al., 2019). Psychosocial work factors include job demands (e.g., high work pace, high requirements) and job resources (e.g., control at work, support from co-workers and supervisors). Psychosocial work factors (job demands & job resources) have a role in burnout and work wellness (Bakker & Costa, 2014; Upadaya et al., 2016). Therefore, this research aimed to explore the role of psychosocial factors in wellness of physicians taking burnout as the mediating mechanism.

Job demands refer to those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs (Bakker & Demerouti, 2007; Demerouti et al., 2001). Examples included quantitative demands, work pace, and emotional demands. On contrary, job resources refer to those physical, psychological, social, or organizational aspects of the job that are functional in achieving work goals, reducing job demands and the associated physiological and psychological costs, or stimulating personal growth, learning, and development (Bakker & Demerouti, 2007; Demerouti et al., 2001). Examples included decision authority, skill discretion, role clarity and social support.

As per the Job Demands-Resource (JD-R) theory job demands and resources initiate two processes, such as a health-impairment process and a motivational process (Bakker & Demerouti, 2017). The former is of special interest for this study. In the health-impairment process, burnout is taken as an intermediate mechanism that connects the psychosocial work environment with outcomes. Burnout is a psychological syndrome that may emerge when employees are exposed to a stressful working environment, with high job demands and low resources (Bakker & Demerouti, 2007; Maslach et al., 2001). Evidence suggested that experience of burnout leads to several health-related issues such as respiratory and gastrointestinal infections (Kim et al., 2011), depression, sleep deprivation (Yang & Hayes, 2020).

Taking insight from literature and JD-R theory, it is expected that the effect of psychosocial work environment (demands and resources) on work wellness of employees is mediated by burnout. Work wellness refers to a composite of physical, emotional, spiritual, intellectual, psychological and social health (Reardon, 1998). It is the positive perception and expectation about physical health, self regard/self esteem, consolidative force between mind and body, intellectuality, and being valued in social life.

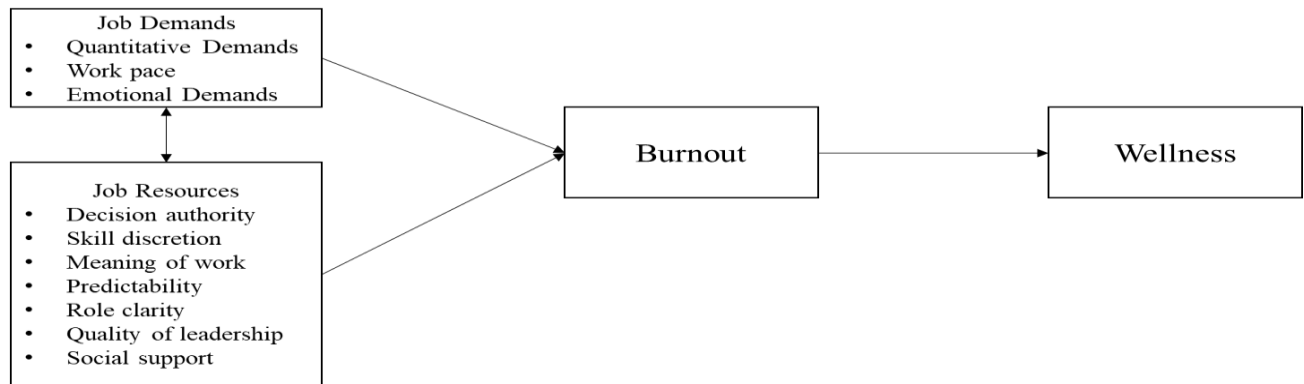


Figure 1: Hypothetical Model

The present study is planned taking insight from Job-Demands Resource Theory (Bakker & Demerouti, 2014; Bakker et al, 2023; Demerouti et al., 2001; Schaufeli & Bakker, 2004; Taris, & Schaufeli, 2015). The fundamental assumption of the JD-R theory is that different job characteristics can be categorized into two categories: job demands and job resources. The JD-R theory which mainly emerged as the model of employee wellbeing, proposes that job demands and resources can initiate health-impairment process and leads to burnout which may further contributes to wellness and well-being of employees. Following hypotheses were formulated in this regard

1. Job demands and job resources will differently associate with burnout and wellness of employees.
2. Burnout is likely to mediate the role of job demands and job resources in wellness of employees.

To test the health-impairment process, the sample of physicians were selected due to the following reasons. Physicians suffer from high stress and burnout (Fuß et al., 2008; Wallace et al., 2009), even more so than community samples (Carta et al., 2017). Physicians' burnout is important with a view to preventing and mitigating its purportedly high prevalence and impacts on individual physicians wellness. High job demands from physicians and low job resources provided to them can cause job strain, mental stress, and stress to employees, which result in physical and mental health problems. Employees who are burned-out by their work, experience more psychological and physical health problems (Bakker & Costa, 2014). The health impairment processes (burnout) evoked by job demands and resources may lead to wellness of employees (e.g., depressive symptoms; Upadyaya et al., 2016). A systematic review Yang and Hayes (2020) concluded that health care professionals suffering from burnout are at risk of developing a wide range of health-related problems. This effect of burnout on well-being was even higher during the pandemic COVID-19 (Conti et al., 2021)

2. Method

2.1 Sample

Sample consists of 251 physicians ($M_{age} = 33.27$ years; $SD_{age} = 7.15$) which were approached through purposive sampling technique. Only those physicians were recruited who work in emergency wards at least for 15 days a month. Demographic analysis indicated that 143 were female and remaining 108 were male. Among these physicians, 115 doctors have specialization after MBBS. More than half of the participants (51.4%) reported that they have a work experience of 2-5 years, remaining have a work experience of 5-10 years (31.1%) or 10 years and above (17.5%). In total, more than half (i.e., 56%) reported that they have no flexibility in their work schedule. Estimated daily work time of about half of the physician was 8-12 hours (42.2%) and about another half of the physicians was above 12 hours (47.2%). Only 36% reported that they often or always enjoy their work activities.

2.2. Measures

The *Copenhagen Psychosocial Questionnaire* (Kristensen et al., 2005) is a 44-item questionnaire measuring psychosocial environment. However, for this research 24-items measuring job demands and job resources were used. Six of the items measure job demands and 16 measure job resources. Job demands included quantitative demands, work pace, and emotional demands while job resources included decision authority, skill discretion, meaning of work, predictability, recognition, role clarity, quality of leadership, and social support. Participants report each item on a 5-point Likert scale (1 = *Never* - 5 = *Always*). Sample item is, "Do you have enough time for your work tasks." The internal consistency of job demands is ($\alpha = .60$) and of job resource is ($\alpha = .82$).

The *Oldenburg Burnout Inventory* (Demerouti, 1999) is a 16-items scale measuring burnout. Participants rate each item on a 4-point Likert scale (1 = *Strongly agree* - 4 = *Strongly disagree*). Sample item is, "There are days when I feel tired before I arrive at work." Internal consistency of burnout is ($\alpha = .62$).

The *Perceived Wellness Scale* (Adams et al., 1997) is a 36-items scale measuring wellness. Participants rate each item on a 6-point Likert scale (1 = *Very strongly disagree* - 6 = *Vary strongly agree*). Sample item is, "My physical health has restricted me in the past." Internal consistency of wellness is ($\alpha = .81$).

2.3 Procedure

After taking formal permission from the authorities, the data was collected from physicians of public sector hospitals. The participants were informed about the purpose of research. Consent was taken after guiding the research participants about confidentiality and anonymity of the data. They were also informed that they have right to withdraw from this research. The dataset consisted of 260 participants which through screening reduced to 251 physicians.

3. Results

Descriptive analysis was conducted to see the variability, and normality of the study variables. Moreover, reliability analysis was done to see the internal consistencies. Table 1 provides an overview of descriptive statistics, normality and reliability.

Table 1: Descriptive Statistics, Normality and Reliability of the Study Variables

Scales	α	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Job Demands	.60	2.09	0.72	-0.05	-0.54
Job Resources	.82	1.80	0.64	-0.33	-0.64
Burnout	.62	2.11	0.45	-0.72	-0.06
Wellness	.81	3.88	0.49	0.14	0.49

Table 1 shows that the study variables indicate variability in the responses. The data was normally distributed as all of the skewness kurtosis values were near to zero. Reliability analyses yielded good ($\alpha = .60$ for job demands) to excellent ($\alpha = .82$ for job resource) internal consistencies.

After conducting the preliminary analysis, Pearson product moment correlation was performed. Table 2 provides an overview of this analysis.

Table 2: Pearson Product Moment Correlation between Study Variables

Scales	Gender	Work flexibility	Job Demands	Job Resources	Burnout	Wellness
Gender	-	-.17**	.01	-.17**	.07	-.09
Work flexibility		-	.03	.02	.00	-.13*
Job Demands			-	-.22***	.24***	-.16*
Job Resources				-	-.56***	.31***
Burnout					-	-.44***
Wellness						-

Note. Gender (1 = male, 2 = female). Work flexibility (1 = yes, 2 = No).

*** $p < .001$. ** $p < .01$. * $p < .05$.

Correlation analysis shows that among the two demographics, gender negatively associated with job resource while work flexibility negatively associated with wellness. Specifically female reported that they have job resources available more than male and those who have no flexibility at work reported low wellness. With respect to the study variables, job demands positively associated with burnout and negatively associated with wellness while job resources positively associated with wellness and negatively associated with burnout. Moreover, job demands and job resources negatively associated with one another.

Furthermore, model testing was done in AMOS to see the mediation of burnout between the association of job demands and job resources with wellness. Overall, model fit indices showed a good model fit as RMSEA = .02, base-line comparison $\geq .95$, chi-square = 2.19 (2), $p > .05$. The model fit indices were in line with the recommendations of Hu and Bentler (1999) who suggested RMSEA value below or close to 0.06, baseline comparisons (i.e., CFI, TLI, and NFI) value of 0.95 or higher for a good model fit. Figure 2 provides an overview of the direct effects.

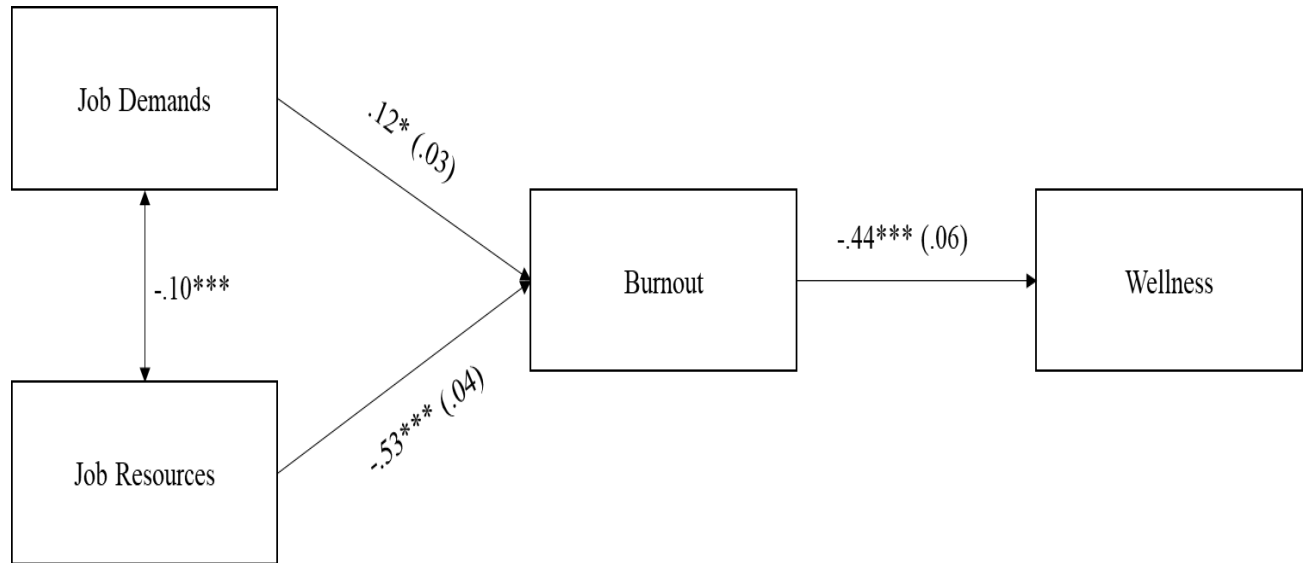


Figure 2: Statistical Model Presenting Standardized Direct Effects and Standard Error

Figure 2 shows a negative association between job characteristics namely job demands and job resources. All of the direct paths were statistically significant. The direct paths from job resources to burnout showed negative prediction and vice versa for job demands to burnout. Furthermore, burnout also emerged as negative predictor of wellness. Furthermore, indirect effects were explored using bootstrap sample of 2000 (See Table 3 for details).

Table 3: Standardized Indirect Effects OF Job Characteristics on Wellness using 2000Bootstapp Sample

Indirect Paths	β	SE	95% CI	
			LL	UL
Job demands \rightarrow Burnout \rightarrow Wellness	-.04	.03	-.07	-.01
Job Resource \rightarrow Burnout \rightarrow Wellness	.18	.02	.13	.24

Table shows that bootstrap analysis using 2000 sample indicate the mediating role of burnout in the relation of job demands and job resources with wellness. The direction for the mediating mechanism was negative for job demands and positive for job resources.

4. Discussion

This study examined the role of psychosocial work environment for work wellness. The main interest was to examine the health-impairment process of the JD-R theory (Schaufeli & Bakker, 2004) as a mechanism through which job demands and job resources contributes in work wellness through the mediating mechanism of burnout. For the fine-grained test of health-impairment process, the data was collected from physicians considering the prominent role of burnout in a wide range of health-related problems (e.g., depressive disorders and insomnia) among health care professionals (Yang & Hayes, 2020). Most of the results corroborated in the expected direction as consistent with previous literature health-impairment process of JD-R theory. In sum, it is concluded that psychosocial environment at work matter for the well-being of employees.

In line with the first assumption of the study, the findings provide evidence that job demands and job resources will differently associate with burnout and wellness of employees. For instance, job demands positively associated with burnout while negatively associated with the wellness of physicians. The reverse has been for the association of job resources with burnout and wellness. These findings are consistent with the defining aspects of demands and resources. Demands being required effort or skill set are associated with certain physiological or psychological cost while resources being functional aspects of work achievement may stimulate personal growth and development (Bakker & Demerouti, 2007; Demerouti et al., 2001).

The present findings also supported the second assumption of this study (i.e., mediating role of burnout between psychosocial work environment and wellness). Physicians with high-level job demands tended to exhibit increased burnout, which in turn threatened their wellness. Doctors may compensate increasing job demands by exerting more physical or psychological effort to maintain their wellness. Continuous mobilization of compensatory efforts drains doctors' energy, leading to increasing burnout and ill health (Ryan & Deci, 2000). Literature suggested that job demands may hinder the well-being of employees (e.g., de Vries et al., 2018; Wynen et al., 2020). On the contrary, doctors with greater job resources were more likely to experience increased wellness by lower level of burnout. Doctors with plenty of additional work-related resources will exhibit greater comfort and psychological security in the workplace (Scheepers et al., 2017).

4.1. Implications

- The study provided empirical support to the health-impairment process of Job-Demands Resource theory by testing it among Pakistani physicians.
- The findings implicates that occupational health professionals/organizations should play a central role in the prevention and reduction of burnout, simultaneously paying attention to the organizational context and the personal needs of the individual employee (Kompier et al., 2000).

- The current study suggested that health policymakers and hospital administrators should provide a work environment with a dynamic equilibrium between doctors' job demands and resources.
- Medical organizations can utilize Job redesign intervention to rearrange task and responsibility with job role in order to balance job demand and job resources for employees.
- Interventions can be developed to reduce negative impact of burnout among employees in general and among physicians in specific.

5. References

- Adams, T., Bezner, J., & Steinhardt, M. (1997). The conceptualization and measurement of perceived wellness: Integrating balance across and within dimensions. *American Journal of Health Promotion*, 11(3), 208-218.
- Bakker, A. B., & Costa, P. L. (2014). Chronic job burnout and daily functioning: A theoretical analysis. *Burnout Research*, 1(3), 112-119. <https://doi.org/10.1016/j.burn.2014.04.003>
- Bakker, A.B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology*, 22, 309-328. <https://doi.org/10.1108/02683940710733115>
- Bakker, A. B., & Demerouti, E. (2014). Job demands–resources theory. Wellbeing: A complete reference guide, 1-28.
- Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 22(3), 273 –285. <https://doi.org/10.1037/ocp0000056>
- Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. (2023). Job demands–resources theory: Ten years later. *Annual Review of Organizational Psychology and Organizational Behavior*, 10, 25-53. <https://doi.org/10.1146/annurev-orgpsych-120920-053933>
- Carta, M. G., Preti, A., Portoghese, I., Pisanu, E., Moro, D., Pintus, E., et al. (2017). Risk for depression, burnout and low quality of life among personnel of a university hospital in Italy is a consequence of the impact one economic crisis in the welfare system? *Clin. Pract. Epidemiol. Ment. Health*, 13, 156–167. <https://doi.org/10.2174/1745017901713010156>
- Conti, C., Fontanesi, L., Lanzara, R., Rosa, I., Doyle, R. L., & Porcelli, P. (2021, April). Burnout status of Italian healthcare workers during the first COVID-19 pandemic peak period. *Healthcare*, 9(5), 510). <https://doi.org/10.3390/healthcare9050510>
- De Vries, H., Tummers, L., & Bekkers, V. (2018). The diffusion and adoption of public sector innovations: A meta-synthesis of the literature. *Perspectives on Public*

- Demerouti, E. (1999). *Oldenburg Burnout Inventory* [Database record]. APA PsycTests. <https://doi.org/10.1037/t01688-000>
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied psychology*, 86(3), 499.
- Dutheil, F., Aubert, C., Pereira, B., Dambrun, M., Moustafa, F., Mermillod, M., ... & Navel, V. (2019). Suicide among physicians and health-care workers: A systematic review and meta-analysis. *PloS one*, 14(12), e0226361.
- Fuß, I., Nübling, M., Hasselhorn, H. M., Schwappach, D., and Rieger, M. (2008). Working conditions and work family conflict in German hospital physicians: Psychosocial and organisational predictors and consequences. *BMC Publ. Health*, 8, 353-370. <https://doi.org/10.1186/1471-2458-8-353>
- Kim, H., Ji, J., & Kao, D. (2011). Burnout and physical health among social workers: A three-year longitudinal study. *Social work*, 56(3), 258-268. <https://www.jstor.org/stable/23719205>
- Kompier, M. A., Cooper, C. L., & Geurts, S. A. (2000). A multiple case study approach to work stress prevention in Europe. *European Journal of Work and Organizational Psychology*, 9(3), 371-400. <https://doi.org/10.1080/135943200417975>
- Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress*, 19(3), 192-207. <https://doi.org/10.1080/02678370500297720>
- Maslach, C., Schaufeli, W.B., & Leiter, M.P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397-422.
- Reardon, J. (1998). The history and impact of worksite wellness. *Nursing Economics*, 16(3), 117-121.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78. <https://psycnet.apa.org/doi/10.1037/0003-066X.55.1.68>
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 25(3), 293-315. <https://doi.org/10.1002/job.248>
- Scheepers, R. A., Lases, L. S., Arah, O. A., Heineman, M. J., & Lombarts, K. M. (2017). Job resources, physician work engagement, and patient care experience in an academic medical setting. *Academic Medicine*, 92(10), 1472-1479. <https://doi.org/10.1097/ACM.0000000000001719>

- Upadaya, K., Vartiainen, M., & Salmela-Aro, K. (2016). From job demands and resources to work engagement, burnout, life satisfaction, depressive symptoms, and occupational health. *Burnout Research*, 3(4), 101-108. <https://doi.org/10.1016/j.burn.2016.10.001>
- Wallace, J. E., Lemaire, J. B., and Ghali, W. A. (2009). Physician wellness: A missing quality indicator. *Lancet* 374, 1714–1721. [https://doi.org/10.1016/S0140-6736\(09\)61424-0](https://doi.org/10.1016/S0140-6736(09)61424-0)
- Wynen J., Boon J., Kleizen B., Verhoest K. (2020). How multiple organizational changes shape managerial support for innovative work behavior: Evidence from the Australian public service. *Review of Public Personnel Administration*, 40(3), 491–515. <https://doi.org/10.1177/0734371X18824388>
- Yang, Y., & Hayes, J. A. (2020). Causes and consequences of burnout among mental health professionals: A practice-oriented review of recent empirical literature. *Psychotherapy*, 57(3), 426–436. <https://doi.org/10.1037/pst0000317>