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Job Performance Based on the Job Demands-Resources Model (JD-R): Differences in Physicians' Performance Before and During COVID-19 Pandemics

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ABSTRACT

The present study aims to investigate the extent to which demands and resources at work affect the job performance of doctors and the extent to which there may be other variables such as family support and job crafting that may be associated to job performance. We also aim to observe the effects of the Covid-19 pandemic in the physicians' job performance. A numaber of 227 physicians from public clinics and hospitals completed a set of questionnaires measuring job performance, job crafting, and family support. Of these, 123 participated in the study during the Covid-19 pandemic, and the remaining 104 before the pandemic. The results show that the job demands-resources model predicts the physicians' performance and job crafting is a significant mediator of this relationship. Contrary to our expectations, family support does not moderate the relationship between demands, resources and job performance. The comparison between groups showed higher levels of work pressure, emotional demands and constraints for the physicians assessed pre-pandemic and also for feedback, social support, feedback from supervisors, and development opportunities for the physicians assessed during the pandemic. Unsignificant differences were found in job performance and job crafting. This study brings a new perspective on the JD-R model by introducing a new moderator in the relationship between demands, resources, job crafting and job performance, providing additional understanding of the model by investigating differences between pre- and pandemic groups.

Keywords: *physicians, work performance, job crafting, job resources, job demands, family support, Covid-19*

1. INTRODUCTION

Although the medical profession is often regarded as one of the most rewarding and respectable professions, it is also one of the most stressful, with a high risk of long-term negative effects on mental health and wellbeing. The medical profession is constantly exposed to many stressors, such as the expectation from others of a high degree of professionalism, responsibility for the quality of care provided, communicating effectively with patients and maintaining good professional relationships with colleagues. On the other hand, bureaucracy, high workload, irregular working hours, competitiveness, demands for continuous training, pressure of patient demands and poor work-life balance are factors that explain the increased prevalence of psychological disorders and depression among physicians (Compton & Frank, 2011; Harvey et al., 2017). Studies show that the most common mental health problems faced by clinicians are burnout (Rotenstein et al., 2018), anxiety (Ruitenburg et al., 2012), depression and suicidal ideation (Hem et al., 2000; Tyssen et al., 2001).

Therefore it is important to investigate to what extent job demands and resources affect physicians' job performance and, more importantly, to what extent other variables such as family support, job crafting or individual variables may influence their job performance. Many studies in organizational contexts have focused on peer and supervisor support of employees' work performance. Although some researchers have found that family support influences job satisfaction and job stability (Wayne et al., 2006; Yom et al., 2009), it is still unclear what contribution family support makes in the context of job performance.

It is important to understand how physicians' job demands and resources affect their performance. That is why the main purpose of this study was to investigate the role of job crafting and family support in the relationships between job demands and resources and physicians' job performance.

Job Demands-Resources (JD-R model)

In the JD-R model, Bakker & Demerouti (2007) and Demerouti et al., (2001) show that each profession has: (a) job-specific demands, represented by the physical, social and organizational aspects of the job that require sustained physical or mental effort and are associated with certain physiological and psychological losses, and (b) the resources that the employee has at work, represented by those physical, psychological, social or organizational aspects that help the person to achieve the goals of the job and act as a buffer against losses from demands or lead to growth and development. Job demands refer to those aspects of the work context and environment that have the potential to overload the employee, leading to symptoms of burnout. Bakker & Demerouti (2007) classify them into demands related to employee interruptions during a task, excessive workload, role ambiguity and work-life conflict. Job resources include opportunities to use acquired skills, support from superiors, financial rewards and career growth opportunities. The JD-R model is generally applicable regardless of the type of job and regardless of the requirements and resources involved in the work performed. Several studies in different professional areas have shown that job resources correlate positively with commitment (Cho et al., 2006; Meyer & Herscovitch, 2001) and negatively with burnout (Demerouti et al., 2001; Xanthopoulou et al., 2007). For instance, employees who experimented prolonged exposure to too many demands will also consume a lot of personal energy, leading to burnout. Ultimately, in order to minimise losses, they will resort to conserving their resources, which can result in reduced job performance and a lack of desire to progress. Professions with high demands and low resources are detrimental to physical and mental health of employees, especially if accompanied by low rewards (Heuven & Bakker, 2003).

In the medical context, there is an intense concern about the health status of medical staff, especially in terms of their psychological state, adaptation and functioning, seen through the lens of stress, work-life conflict and job performance. In most healthcare systems, physicians' performance has been closely linked to workplace demands, such as working conditions involving heavy workloads overlaid with constant time pressure and energy- and time-consuming administrative tasks (Krämer et al., 2016; Rao et al., 2017).

Most commonly, physicians experience high levels of stress and burnout (McCain et al., 2018), and overly high job demands result in suboptimal patient care and medical errors (Vidyarthi et al., 2007) and high levels of work-life conflict (Fuß et al., 2008). Higher demands at work can cause people to experience greater work-life conflict (Shanafelt et al., 2015), which can subsequently lead to greater burnout. At the same time, the negative effects of work demands are mediated by increased levels of work-life conflict (Minnotte et al., 2013), demonstrating that work demands, work-life conflict and burnout are reciprocal over time (Demerouti et al., 2004).

On the other hand, job resources such as autonomy, support, feedback from superiors or flexibility can mitigate the negative effects of job demands (Bakker & Demerouti, 2007) and help employees to fulfil their job responsibilities. Studies show that higher levels of job resources predict higher levels of job engagement (Barbier et al., 2013) greater participation in decision making, lower likelihood of job change (Hoonakker et al., 2013) and a mitigation of negative effects on work-life conflict (Bakker et al., 2011).

Job-crafting

Job-crafting (JC) is defined as the physical and cognitive changes that individuals make in the tasks or relational boundaries of their work (Wrzesniewski & Dutton, 2001), or the changes that employees can make to balance their work demands and resources with their skills and needs (Tims & Bakker, 2010). More specifically, JC refers to those changes made by employees in a way that provides them with the opportunity for a work environment that suits their needs and enhances the meaning of their work. From the perspective of Wrzesniewski and Dutton (2001), there are three types of job crafting: (a) task crafting, which involves changing the boundaries of the job task with changes in the number or type of tasks; (b) relational crafting, which involves some changes in the quality and/or quantity of interaction with others; and (c) cognitive crafting, which involves changing the framing or visibility of the job.

Tims et al. (2012) identified four different dimensions of workplace development: (a) structural increase in workplace resources; (b) increase in workplace social resources; (c) increase in challenging workplace demands; and (d) reduction in demands that impede optimal workplace performance. Thus, we can understand that those employees who engage in job crafting tend to perceive themselves as more suited for their jobs, be more engaged in their work, and have higher job performance (Bakker et al., 2012; Rudolph et al., 2017). In healthcare, job crafting is associated with proactivity in patient care and high psychological well-being (Gordon et al., 2018), increased levels of clinical knowledge and skills (Dominguez et al., 2018), social resources (Esteves & Pereira Lopes, 2017), and the need for job challenges (Berg et al., 2010).

Beyond the individual level, collective job crafting provides employees with high job skills (Sheehan et al., 2021), increased intrinsic motivation (Mäkikangas et al., 2017), and opportunities for collective professional development and job stability (Oprea et al., 2020). As a result, studies about JC provide evidence for the strong positive relationship between JC and job performance of healthcare professionals at both individual and collective level. The sense of control over work, the need to relate and collaborate with colleagues and superiors, and the need to feel their work as meaningful, are among the most important aspects of employees that lead to engagement and job performance.

Work performance and family support

In the work context, employee performance refers to two key aspects: (a) tangible aspects, such as services provided and (b) intangible aspects, such as interpersonal behaviour and emotional displays (Goodwin et al., 2011). Specifically, job performance refers to how an employee manifests at work. Howladar et al. (2018) consider that performance is the result of behaviours employees exhibit in their work, that are closely related to the goals of the work they perform.

Family support is a strong predictor of positive emotions (McNeil & Repetti, 2021) which in turn produce changes in individuals' physiological responses, thoughts and actions over a long period and with beneficial consequences for the individual's functioning and health (Tugade et al., 2004).

Health research accepts that family support is one of the most important factors influencing the psychological and physical well-being of individuals (Jones et al., 2004; Rosland et al., 2010). The ecological systems model (Voydanoff, 2002) argues that both work and family are two microsystems that interact and influence each other through permeable boundaries, thus creating the work-family system. The relationship between the two microsystems acts bidirectionally so work affects the family, just as the family affects work. Individual, work and family characteristics interact in ways that can become both resources and demands or conflicts. Thompson and Prottas (2006) argue that employees with family support are less likely to experience stress, more satisfied with life, and less likely to change jobs.

At the same time, two types of family support have been conceptualized: (a) emotional support and (b) instrumental support, both of which having an important impact on attitudes and behaviors at work (King et al., 1995). Most studies have focused on the work-family conflict which has been conceptualized as a system of roles and expectations. Thus, each of these roles may interfere with the other, and as a result of this interference, conflicting demands arise that further lead to work-family conflict (Greenhaus & Beutell, 1985). Low family support results in higher work-family conflict, while high family support leads to lower work-family conflict (Carlson & Perrewé, 1999). In other words, perceived family support moderates the relationship between work-family conflict and job satisfaction (Moen & Yu, 2000).

The present study

Some studies have suggested that job demands, can be seen as challenges, thus leading to increased employee performance (Kim & Beehr, 2020; Lepine et al., 2005). In general, research in the field indicates that job demands have a negative association with performance, well-being and job satisfaction (Han et al., 2020; Mark & Smith, 2012).

On the other hand, job resources help employees cope with demanding situations and improve their perception of work. However, Tregaskis et al. (2013) comes with the assumption that from a certain level, resources can become demands within work. In other words, too much decision-making freedom and high autonomy can be too much responsibility for an employee, creating a large amount of distraction and, as a result, it becomes a job requirement to perform at the maximum level. JC represents changes to

tasks and work context in line with employee preferences and abilities. It can be seen as transformational action on the job to better adapt to the employee's needs and goals, leading to more appropriate conditions for better efficiency and performance (Tims et al., 2012). Through job crafting, employees are less likely to experience role ambiguity and task conflict (Bowen & Ostroff, 2004). Taking these assumptions into account, a first objective of the study refers to investigating the role of job crafting in the relationship between job demands and physician. In this regard, we believe that physicians who have high control over job crafting and high job resources will have better job performance. In the same sense, we come with the assumption that physicians who have high control over job crafting and a high level of job demands will have better job performance.Thus as a first hypothesis, we expect that:

H1. *JC is a significant mediator in the relationship between job demands and resources and job performance in physicians*.

In organizational studies, social support has a protective role against stressors (Feng et al., 2018), thus reducing the experience of negative reactions in the face of severe distress (Haslam et al., 2005). Social support can be considered as a moderating variable in mitigating negative work effects (Sargent & Terry, 2000). At the same time, research in the medical field has shown positive associations between social support and job performance. Peer support decreases stress levels (AbuAlRub, 2004), thereby increasing job performance (Amarneh et al., 2010) among hospital nurses. On the other hand, few studies have investigated family support in individuals' work. Scott et al. (2014) report that organizational support mitigates the negative impact of exclusion, while non-organizational social support (e.g. from family and friends) amplifies the negative effect of social exclusion at work. The authors argue that peer support is more likely to contribute to support needs at work, while non-organizational social support cannot compensate for depleted work-related resources. Wang and Tsai (2014) also show that non-organizational support generally reinforces work-life conflict and decreases work performance. Contrary to the above findings, Adams et al. (1996) find family support to be positively related to career success, career development, and job satisfaction. Family members or spousal partners have the ability to support the individual's stability in maintaining their job and reduce their level of job stress by providing emotional support (Baruch-Feldman et al., 2002).

Thus, the second objective of the study is to investigate the extent to which family support may relate to job performance and as second hypothesis expect that:

H2. *Family support is a significant moderator in the relationship between job crafting and job performance in physicians.*

Given the above objectives, the conceptual framework of the study is based on both the role of job crafting and family support, key variables that are considered to enhance job performance. Thus we propose a third hypothesis:

H3. *There is a moderated mediation of job crafting and family support in the relationship between job demands-resources and job performance in physicians*.

A final objective is to investigate the effects of the Covid-19 pandemic on job performance. We consider that there is a reversal of the pre-pandemic balance of demands and resources, i.e. negative work performance outcomes during the pandemic compared to the pre-pandemic period. We therefore propose as fourth hypothesis:

H4. *There are significant differences in the relationship between job demands-resources and physicians' pre-pandemic and pandemic job performance*.

2. METHODOLOGY

Participants and procedure

The sample consisted of 227 physicians, employed in public clinics and hospitals. Of these, 55.07% were female (n = 125) and 44.93% male (n = 102). Of the 227 physicians, 123 participated in the study during the pandemic and 104 before the Covid-19 pandemic. The mean age of the sample was 38.00 (SD = 12.71), with a mean length of service of M = 11.98, SD = 11.08. Of these, 79 (34.8%) were primary care physicians, 66 (29.1%) specialist physicians, 76 (33.5%) resident physicians, and six (2.6%) did not specify specialization. The sample was a convenience one, appealing to the willingness of physicians to participate in the study. Data were collected in two ways: (a) digitally via the Google Forms platform and (b) in pen and paper format. In addition to the scales targeted by the research variables, a range of socio-demographic data was collected, such as gender, age, marital status, specialisation, length of employment and occupational status. Before completing the questionnaire, participants were given information about the study, the risks and benefits, and the confidentiality of the data collected. At the end of this information, participants were asked to give their informed consent to participate in the study. The present study received the approval of the Ethics Committee of the University of Bucharest. Participation in the study was voluntary. Data were collected from 11.2020 to 08.2021. Completion took on average 25 minutes per participant.

Following data collection, we used R software, V4.0.3 (Download R-4.1.1 for Windows. The R-Project for Statistical Computing.) to test the hypotheses.

Instruments

Job demands and resources were measured with The Job Demands-Resources Questionnaire (JD-R), (Bakker & Demerouti, 2014). Five subscales were used to measure job resources, namely: autonomy, feedback, social support, development opportunities, and coaching (feedback from supervisor), with a total of 17 items. Items examples: "I am involved in the decision-making process about my work."; "I receive sufficient information about the results of my work"; "I can count on the support of my colleagues if I have more difficult tasks to accomplish"; "In my professional work, I have the opportunity to develop sufficiently"; "My boss shows understanding for my professional problems and wishes". Four subscales with a total of 19 items were used to measure work demands: work pressure scale, cognitive demands, emotional demands, and constraints. Items examples: "I often have to work extra to get my work done on time"; "I find my work mentally very demanding"); "In my work, I deal with things that affect me on a personal level"; "I have to go through a lot of difficulties to complete projects or tasks". In order to receive the most reliable answers, a number of items were adapted to the context of the doctors' work (e.g. "In my work, I deal with patients who complain all the time"; "I deal with patients who do not treat me with due respect and courtesy"; "In my work, I deal with difficult patients"). Scoring was made on a 5-point Likert-type scale from 1 (never) to 5 (very often).

Job performance was measured with Performance Scale (Goodman & Svyantek, 1999). The instrument contains two facets, contextual performance, with statements such as "I take the initiative to help new employees become accustomed and oriented to the institution, although it is not part of the formal requirements of my job" and task performance, with statements such as "I plan and organize my work to achieve my work goals and meet assigned deadlines". The instrument refers to those behaviours or attitudes for which there is a high likelihood of being adopted at work. For the present study the global scale of the instrument was used. Scoring was made on a 4-point Likert-type scale from 1 (disagree) to 4 (strongly agree).

Job crafting was measured with Job Crafting Scale, (Tims et al., 2012). This scale comprises four dimensions as follows: increasing structural resources, increasing social resources, increasing job challenges, and decreasing job demands that make work difficult. The scale consists of 21 items. Items examples: "I make sure that I use my skills to their full potential."; "I manage my work so that I try to minimize contact with people whose problems affect me emotionally. "; "I look to my direct boss as a source of inspiration."; "I try to make my work more challenging by trying to understand the subtle relationships between different aspects of my job.". For the present study, a version of the scale adapted for the Romanian population (Oprea & Ștefan, 2016) was used.

Family support was measured with Perceived Social Support From Friends and Family Questionnaire (Procidano & Heller, 1983), family support scale. It investigates the extent to which physicians perceive themselves as having support from those close to them, and participants are asked to rate their perceptions of their family or partner. The scale contains 20 items such as: "My family is sensitive to my personal needs", "When I trust my family members, I feel uncomfortable", or "I rely on my family for emotional support". The mode of response is dichotomous. Scoring is done with: 1 if the answer is Yes and 0 if the answer is No or I don't know, and the total scores are calculated by summing the answers.

3. RESULTS

Descriptive statistics

Table 1 presents internal consistency coefficients and Pearson correlations among variables. The descriptive analysis revealed that there were statistically significant positive correlations between the criterion variable job performance and the following predictor variables: autonomy (r = .25), feedback (r = .30), social support (r = .14), development opportunities (r = .25), and coaching (r = .24). There are also significant positive correlations between job performance and the mediator variable job crafting (r = .32) and the moderator variable family support (r = .18), respectively. The mean scores ranged from a maximum of M = 51.86 with a standard deviation SD = 6.43 for job performance to a minimum of M = 10.60 with a standard deviation SD = 2.75 for constraint.

Table 1. *Descriptive statistics*

	1	2	3	4	5	6	7	8	9	10	11	12
1. PER	(.87)											
2. PM	.03	(.83)										
3. SE	.00	.50***	(.81)									
4. SC	.11	.45***	.43***	(.85)								
5. CON	.12	.48***	.55***	.34***	(.88)							
6. AU	.25***	.20**	.10	.30***	.14*	(.77)						
7. FB	.30***	.03	.10	.37***	-.01	.39***	(.79)					
8. SUP	.14*	.02	-.05	.10	-.03	.08	.34***	(.79)				
9. OP	.25***	.11	.05	.38***	-.03	.30***	.67***	.40***	(.84)			
10. CO	.24***	.01	.06	.20**	-.07	.20**	.55***	.45***	.52***	(.91)		
11. JC	.32***	.25***	.27***	.30***	.32***	.27***	.31***	.34***	.36***	.42***	(.87)	
12. SF	.18**	.25***	.13	.36***	.15*	.22**	.33***	.10	.23***	.26***	.29***	(.88)
M	51.86	14.09	19.94	17.67	10.60	16.32	10.84	11.81	11.56	17.45	66.62	13.21
SD	6.43	3.59	4.63	2.63	2.75	4.47	2.32	2.79	2.49	5.06	12.07	3.14

Note. * p < .05, ** p < .01, *** p < .001; M = mean; SD = standard deviation

Note. Internal consistency coefficients are shown diagonally in parentheses; PER = job performance, PM = job pressure, SE = emotional demands, SC = cognitive demands, CON = constraints, AU = autonomy, FB = feedback, SUP = social support, OP = opportunities for development, CO = feedback from supervisors, JC = job crafting/job modelling, SF = family support

Hypotheses testing

Hierarchical regression analysis was used to analyze the effect of job demands and resources on job performance. Thus, in the first step, demands that do not affect job performance (= .08, p = .277) were introduced, explaining approximately 1% of the variance (R2 = .01, F = 1.43, p = .233). Adding job resources in step two causes an increase in the explained variance of job performance of about 10% (ΔR^2 = .10, F = 25.15, p < .001).

SEM analysis was used to test the mediating effect of job crafting on the relationship between job demands and resources and job performance. Thus, the model shows acceptable fit indices (CFI = .87, $\chi^2(40)$ = 135.18, RMSEA = .10, SRMR = .08). Both demands (β = .34, p < .001) and resources (β = .42, p < .001) have a significant effect on job crafting. In turn, the mediating variable, job crafting is linked with job performance (β = .21, p = .004). Job resources have a significant direct effect on job performance (β = .26, p < .001), while job demands have an unsignificant direct effect on job performance (β = -.04, p = .663).

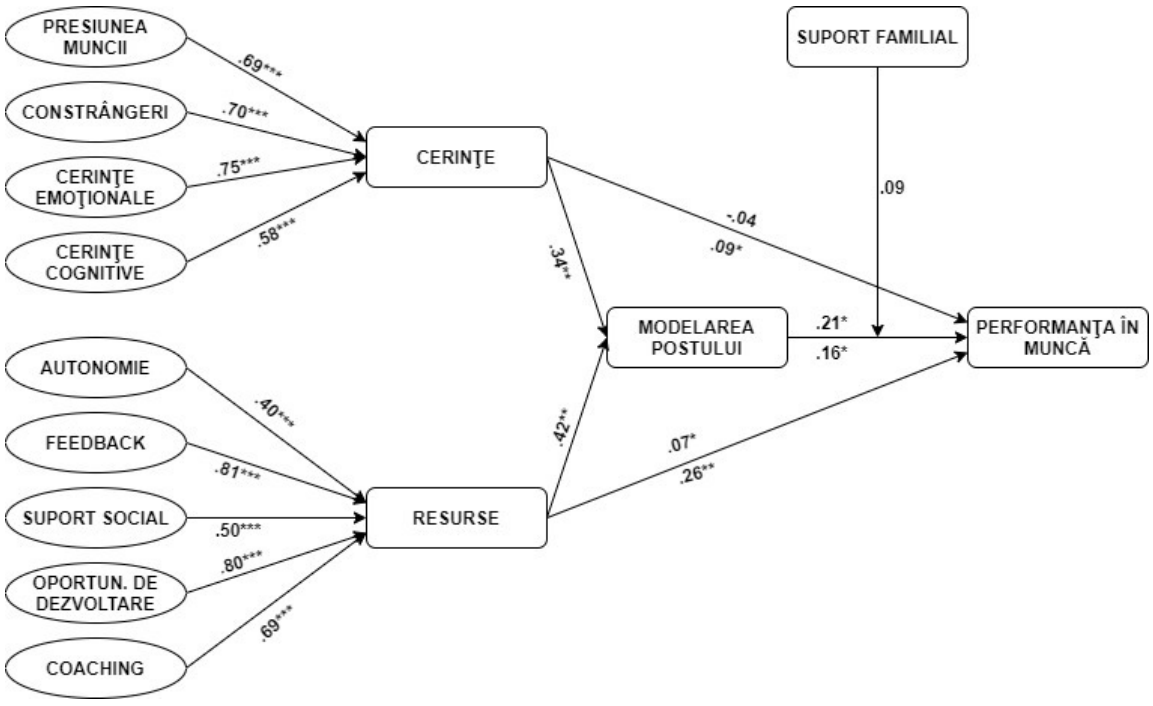

Figure 1. *JD-R coefficients and work performance in physicians*

In summary, job crafting partially mediates the relationship between job resources and job performance (β = .07, p = .020) and fully mediates the relationship between job demands and job performance (β = .09, p = .017). Also, the total mediating effect of job crafting on the relationship between job demands and resources on the one hand and job performance on the other is significant (β = .16, p < .011).

The moderating role of family support on the relationship between job crafting and job performance was also tested. Thus, the interaction between job crafting and family support has no significant effect on job performance (β = .09, p = .061). However, at higher levels of family support the effect of job crafting on performance is greater (β = .19, p < .001) than that observed at lower levels of the moderator (β = .11, p = .008).

Table 2. *Differences between groups before and during the Covid-19 pandemic*

	Before pandemic (N=104)		During pandemic (N=123)	
Variable	M	SD	M	SD
PERF	51.13	6.63	52.47	6.21
PM	14.85	3.60	13.45	3.46
SE	20.68	4.65	19.31	4.54
SC	17.57	2.51	17.75	2.73
CON	17.11	4.60	15.66	4.27
AU	10.93	2.70	10.31	2.76
FB	10.29	2.06	11.30	2.44
SUP	10.49	2.71	11.76	2.72
OP	11.14	2.35	11.91	2.55
CO	15.60	5.30	19.02	4.28
JC	65.93	12.06	67.20	12.10

Note. M = mean, SD = standard deviation, PER = job performance, PM = job pressure, SE = emotional demands, SC = cognitive demands, CON = constraints, AU = autonomy, FB = feedback, SUP = social support, OP = opportunities for development, CO = feedback from supervisors, JC = job crafting.

In terms of job performance, physicians who were evaluated in the pre-COVID period performed non-significantly differently, t(225) = -1.58, p = .116, d = .21 than physicians who were evaluated in the COVID period. For workplace pressure physicians who were assessed in the pre-COVID period scored significantly higher, (t(225) = 2.98, p = .003, d = .40 compared to physicians who were assessed during COVID. For emotional demands physicians who were assessed in the pre-COVID period had a significantly higher mean at a modest effect size, t(225) = 2.25, p = .026, d = .40 compared to physicians who were assessed during COVID. For cognitive demands physicians who were assessed in the pre-COVID period did not have a significant difference, t(225) = -.49, p = .626, d = -.07) compared to that of physicians who were assessed during COVID. At the constraint level, physicians who were assessed in the pre-COVID period scored significantly higher, t(225) = 2.58, p = .015, d = .32 than physicians who were assessed in the COVID period. In terms of autonomy physicians who were evaluated in the pre-COVID period did not have a significant difference, t(225) = 1.71, p = .088, d = .23) compared to physicians who were evaluated during COVID period. For feedback, physicians who were assessed in the pre-COVID period had a significantly lower mean, t(225) = -3.34, p < .001, d = -.45 compared to physicians who were assessed in the COVID period. For social support, physicians who were assessed in the pre-COVID period had a significantly lower mean, t(225) = -3.52, p < .001, d = -.47 compared to physicians who were assessed during COVID. In terms of developmental opportunities, physicians who were assessed in the pre-COVID period scored significantly lower, t(225) = -2.37, p = .019, d = -.32) compared to physicians who were assessed during COVID. At the level of feedback received from supervisors, physicians who were evaluated in the pre-COVID period had a significantly lower mean, t(225) = -5.39, p < .001, d = -.72. In terms of job crafting, physicians who were evaluated in the pre-COVID period did not have a significant difference, t(225) = -0.79, p = .431, d = -.10 compared to physicians who were evaluated in the COVID period.

4. DISCUSSION

The aim of this study was to bring more clarity to the healthcare organizational field, exploring how job demands and resources are linked to job performance of physicians in public clinics and hospitals. Furthermore, we aimed to examine how physicians' job crafting ability positively associates with their job performance, thus within our model job crafting played a mediating role between demands, resources and physicians' job performance. Finally, within

the model, the support received from the family was considered to make an important contribution to job performance. At the same time, we wanted to observe the differences in physicians' demands, resources and performance before and during the Covid-19 pandemic.

The results showed that job demands are an unsignificant predictor of physician performance. In contrast, when resources are added to the model, they significantly and positively predict job performance. Thus, we can state that job demands do not affect doctors' job performance. These results contradict studies in the literature that claim that demands are a powerful stressor for employees, which can interfere with performance by affecting work commitment, motivation to invest effort and maintain consistency in their work (Bakker et al., 2004; Beehr et al., 2000). At the same time, the literature shows that increased demands lead to decreased cognitive energy (Athar et al., 2020), decreased confidence and uneffectiveness in work (Salanova et al., 2006) and decreased job task meaningfulness (Grant, 2008), all of which are linked to job performance.

The explanation for the results of the present study is possible to consist in the fact that physicians give a different meaning to work compared to employees in other organizational fields (Wrzesniewski & Dutton, 2001). Shanafelt (2009) argues that one of the most important elements of the meaning of work that physicians give is the satisfaction they get from getting patients well, which helps protect themselves against burnout. An increased level of work meaning has a compensatory effect on negative emotionality, with positive effects on resilience in the face of organizational adversities (Bassi et al., 2013). As a result, the significance of work may be a motivational element that correlates significantly with positive affectivity (Steger et al., 2013). Moreover, they are trained from the time of their studies on the demands of the medical profession, thus they are taught techniques to manage the job demands (Dobkin & Hutchinson, 2013; Lerner et al., 2009; Von Fragstein et al., 2008). In evaluating studies aimed at educating medical staff Shapiro et al. (2000) showed that medical staff who had educational programs aimed at managing work-related stressors experienced better psychological state, manifested increased empathy, used healthier adaptive strategies, and more conflict management skills. In the same way, we can state that during their years of training, they are taught specific work priorities that help them balance the relationship between demands and performance. Thus, increasing or decreasing job demands in physicians are not likely to affect job performance because they may perceive certain demands such as overload, pressure, and too many responsibilities as obstacles to be overcome in order to learn and acquire higher skills (Cavanaugh et al., 2000).

Job resources, on the other hand, are a significant positive predictor of physician job performance, results being consistent with other studies that assert that high levels of resources reduce burnout rates in surgeons (Lindeman et al., 2017) or that high levels of job resources may encourage job engagement (Crawford et al., 2010). Similarly, they play an important role in shaping personnel satisfaction, health and performance (Roczniewska et al., 2020). When job demands are high, those who have the necessary amount of resources can have greater engagement in the job (Bakker & Sanz-Vergel, 2013), so this leads to positive self-regulation, intrinsic motivation and greater focus on the job goals (Youssef & Luthans, 2007).

As expected, there is a predictive relationship between the demand-resource model and job performance in physicians, and job craftng is a significant mediator of the link between them. Thus, the study results support the assumption of the JD-R model that job crafting is associated with job performance (Tims et al., 2015). Job crafting is the employees' way of reducing job demands as a result of the changes they resort to in order for tasks to suit them. As a result, through job crafting, they seek new challenges that result in subjective well-being, adaptive and contextual performance (Gordon et al., 2018). Job crafting increases perceptions of self-efficacy by creating an easier, more manageable work environment and more opportunities to find resources and develop higher skills. When employees have available resources available (e.g. social support, development opportunities, feedback), they tend to take on additional roles and responsibilities, and when employees shape the job to be more challenging, they learn new skills and have proactive behaviors, which positively influences their performance (van den Heuvel et al., 2015).

Contrary to our expectations and the literature supporting our initial assumption (Karatepe, 2016; Pérez et al., 2015), family support does not moderate the relationship between demands, resources and job performance. According to Greenhaus and Powell's (2006) model, family support means how the family environment becomes a source of work enrichment. Family support translates into the individual feeling loved, cared for and valued (King et al., 1995), aspects that may favour their behaviours and actions at work. The fact that family support did not moderate the relationship of the present study's model can be justified by the fact that for doctors the two roles they have, that of employee and that of family member, are split so that they do not have the strength to overlap and influence each other, as is the case in other fields of research (Rosland et al., 2010; Serovich et al., 2001). Moreover, for them, the support received from family members may be irrelevant in their work performance, considering it rather as a support in their personal life and not in their professional one (Abendroth & den Dulk, 2011; Secor et al., 2017). Most likely, when they start a family or enter into an intimate relationship, both partners assume that the physician profession is a demanding one, with assumed consequences related to

time spent with family, the limited resources they have when they finish their work, as a result the support they receive from them does not impact their work. Another explanation for the results is that for physicians, support from colleagues is more impactful than support from family in their work. The fact that they receive support from people who understand the dynamics of their work, and live the same professional experiences is more valuable support than that received from family who may understand from a different perspective the dynamics of their work (Ahlstedt et al., 2019).

Regarding the relationship between job resources and demands and physician performance pre-pandemic and during the pandemic, the results show that there are significant differences only on some levels. Thus, higher levels of work pressure, emotional demands, and constraints were found for the group of physicians evaluated pre-pandemic. Significantly higher scores were reported for the pandemic sample of physicians compared to the pre-pandemic sample on feedback, social support and feedback from supervisors. Unsignificant differences were reported in job performance and job crafting. These results contradict our initial assumption and recent studies supporting that there are significant rates of burnout among physicians (Guo et al., 2021; Lorello et al., 2021). At the same time, the lower level of perceived work pressure, emotional demands, and constraints during the pandemic can be put on the fact that they had several other important resources that acted as a buffer on these variables. The fact that during this period the whole organization of work underwent structural changes, physicians had to adapt to the new conditions. These new conditions influenced the increase of important organizational resources such as social support (Labrague & De los Santos, 2020), feedback from colleagues (Behrman et al., 2020) and supervisors (Salas-Vallina et al., 2020) and opportunities for development (Yom et al., 2009). The unsignificant differences in job crafting are justified on the basis that in this pandemic time there are a number of rules and restrictions in performing tasks that did not give physicians the opportunity to apply job crafting. On the other hand, the fact that performance and job crafting are not significantly lower compared to the pre-Covid-19 period may be due to the resources gained with the pandemic, resources related to human capacity, which on this occasion once again shows its important contribution to the organizational framework (Kim et al., 2020). Mutual support, feedback from colleagues and last but not least the support received from supervisors have the potential to maintain physician performance even in critical times such as the COVID-19 pandemic.

Practical Implications

The findings of our study contribute to a growing body of studies striving to bring more clarity to the mechanisms of the JD-R model. This research contributes to several research directions. First, it comes with a new perspective on the model by introducing a new moderator in the link between demands, resources, respectively job crafting and job performance. Considering that the literature has dealt to a lesser extent with the investigation of family support in organizational settings, we believe that the present work can bring a new perspective on the broad concept of social support. In addition, the study provides further insight by investigating differences between the pre- and post-pandemic physician groups. Recently a multitude of studies show conflicting relationships, often in studies of pre-pandemic medical staff. Therefore, the present study aims to bring more clarity to the differences in the working lives of physicians during the two time points.

Last but not least, through this research we propose a greater focus on psycho-educational interventions dedicated to medical personnel, which may benefit from a better quality of medical services and higher well-being of medical personnel.

Limitations and future research

This study has a number of limitations. First, it has a cross-sectional design, with data collected at only a single time interval, so we cannot draw causal conclusions about the relationships between variables. For future studies we recommend collecting longitudinal data to better generalize the results and to more accurately observe differences over time. Another limitation is that participants completed self-report scales, which could have led to responses bias. Future studies may therefore consider assessing physicians' job performance using organizational assessment methods.

A very important limitation is the study sample. Due to pandemic circumstances, the two samples, the pre-pandemic group and the pandemic group respectively, consisted of different respondents. We therefore recommend that future studies consider collecting data on the same sample at multiple time points.

We also recommend that future studies consider subscale statistical analysis of each of the components of the JD-R model.

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