THE IMPACT OF COVID-19 WORK DEMANDS ON WORK-FAMILY CONFLICT AND PSYCHOLOGICAL WELL-BEING AMONG ESSENTIAL NON-HEALTHCARE WORKERS

EL IMPACTO DE LAS DEMANDAS LABORALES RELACIONADAS CON EL COVID-19 EN EL CONFLICTO TRABAJO-FAMILIA Y BIENESTAR PSICOLÓGICO ENTRE TRABAJADORES/AS ESENCIALES NO SANITARIOS/AS

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ABSTRACT

This study examined the impact of the COVID-19 pandemic on essential non-health care workers by examining perception of job demands and resources and its impact on work-family conflict and psychological well-being. We used the Job-Demands Resources model to examine the study variables. This is the first phase of an ongoing longitudinal study. A convenience sample of 161 essential non-health care workers participated in the baseline phase presented in this study. We developed three questionnaires to measure: 1) COVID-related work demands, 2) organizational, and 3) personal resources based on the Job Demands-Resources model, and 4) work-family conflict due to COVID-19. We also measured general psychological distress, anxiety, and depressive symptomatology. We conducted partial least squares structural equation modeling to test the hypotheses. Preliminary baseline results suggest that COVID-19 work demands had positive and significant relations to work family-conflict, anxiety, and depression, but it had a negative and significant relation to general psychological distress. Meanwhile, personal resources only significantly mediated the relationship between COVID-19 related work demands and depression (IE = -.061, $p = .028$). Findings suggest that COVID-19-related demands had significant effects on all study dependent variables, particularly work-family conflict. Personal resources only mediated relationship between COVID-19 work demands and depression.

KEYWORDS: COVID-19, essential non-healthcare workers, job demands-resources model, psychological well-being, work-family conflict.

RESUMEN

Este estudio examinó el impacto de la pandemia de COVID-19 entre personal esencial no sanitario mediante el examen de la percepción de demandas y recursos laborales en los conflictos entre el trabajo, familia y bienestar psicológico. Usamos el modelo Recursos Trabajo-Demandas para examinar las variables de estudio. Este es la fase inicial de un estudio longitudinal aún en proceso. Un total de 161 participantes han participado de la primera fase base presentada en este trabajo. Examinamos: demandas laborales relacionadas con COVID-19, recursos organizacionales y personales, malestar psicológico general, ansiedad y depresión. Usamos PLS-SEM para probar la hipótesis del estudio. Los resultados preliminares de la primera fase de este estudio aún en curso sugieren que las demandas laborales de COVID-19 tuvieron relaciones positivas y significativas con el conflicto trabajo-familia, ansiedad y depresión, pero una relación negativa y significativa con el malestar psicológico general. Mientras tanto, los recursos personales solo mediaron significativamente la relación entre demandas laborales relacionadas con COVID-19 y depresión (EI = -.061, $p = .028$). Las demandas relacionadas con COVID-19 tuvieron efectos significativos en todas las variables del estudio, particularmente en el conflicto trabajo-familia. Los recursos personales solo mediaron la relación entre las demandas laborales de COVID-19 y depresión.

PALABRAS CLAVE: Bienestar psicológico, conflicto trabajo-familia, COVID-19, modelo demandas-recursos, personal esencial no sanitario

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Numerous international studies have documented that during the pandemic, the incidence of some psychiatric disorders began to increase in the general population. Specifically, symptoms of insomnia, depression, substance abuse, anxiety and post-traumatic stress augmented considerably in China, Spain, United States of America (USA), Canada, Iran, Italy, and other countries (Xiong et al., 2020). For example, Evans et al. (2021) in a longitudinal study with young adults at a United Kingdom (UK) university and with the same participants, assessed depression symptoms prior to the lockdowns (autumn 2019) and during the pandemic (April/May 2020). Results showed that prior to the pandemic, 13.8% of the participants meet the criterion of a depressive disorder. However, during the pandemic the number of people with major depression increased considerably (34.3%).

Another similar study compared the proportion of a sample of the general population pre and post the COVID pandemic. Ettman et al. (2020) found that compared to adults interviewed in 2017-2018 that reported 8.5% of clinical depression, from March to April of 2020 that number rose to almost 28%. More worrisome is that prior to the pandemic only 0.7% of the population reported severe depression, but from March to April 2020 that number rose to 5.1%. In a recent cross-national study, Al Omari et al. (2020) explored the prevalence of stress, depression and anxiety in young people aged 15-24, in six different countries (i.e. Oman, Saudi Arabia, Jordan, Egypt, Irak and United Arab Emirates). The total prevalence of stress, depression, and anxiety, was 38%, 57 Since the declaration of the COVID-19 pandemic by the World Health Organization WHO), research has evidenced its unprecedented impact on the mental health of the population (2020). Due to the nature of their jobs, essential workers (i.e., healthcare workers, grocery/retail workers, postal workers, delivery drivers, among others) have been particularly affected by the pandemic (Sim, 2020). As lockdowns and stay-at-home orders were implemented around the world, most essential workers continued to work despite the substantial changes to their job, potential COVID-19 exposure, or fear of harming their family members. Research during pandemic has evidenced how these job-related challenges can negatively affect the mental health and well-being of essential workers (Lai et al., 2020). However, most COVID-19 research to date has focused on health-care workers; while studies on essential non-healthcare workers (ENHW) are comparatively scarce (e.g., Lan et al., 2020).

The limited available evidence on ENHW is mixed. Some of these studies suggest that non-healthcare workers have higher odds of experiencing higher stress levels, anxiety, and depression than healthcare workers (e.g., Lin Toh, et al., 2021; Mrklas, 2020); however, others suggest the contrary is true (Alshekaili, 2020). Two key additional issues emerge from these findings. Firstly, research has mostly focused on North America and Europe, leaving the additional challenges faced by ENHW living in contexts such as Latin America and the Caribbean largely unaddressed (De Boni et al., 2020). Secondly, the use of a theoretical framework or model to clarify the role of work environment changes due to the pandemic in the psychological health of ENHW is largely absent. The Job-Demands Resource Model is an empirically tested and widely used model that could be helpful in explaining the relationships between work characteristics and psychosocial well-being among ENHW in Latin America and the Caribbean during the COVID-19 pandemic (See Figure 1; Rosario-Hernández et al., 2013).

Thus, the aims of the current study were to: (1) examine the direct effects of COVID-19 work demands (CWD) and resources (job resources & personal resources) on work-family conflict due to COVID-19 (WFCDC) and psychological well-being (general psychological distress, anxiety, and depression); and (2) to examine the mediating effects of job resources (JR) and personal resources (PR)

on the relationship between CWD and WFCDC, general psychological distress (GPD), anxiety (Anx), and depression (Dep) using as a framework the Job-Demands-Resources model.

Theoretical Framework and Hypotheses

The Job-Demands-Resources (JD-R) model suggests that the characteristics of any work can be categorized in two types: job demands and job resources. Job demands refer to physical, psychological, social, or organizational aspects of the job that involve continuous use of physical and/or psychological effort (Demerouti & Bakker 2011). Job resources refer to the physical, psychological, social, or organizational aspects of the job that are key for achieving job objectives, reducing work demands and related costs, and promoting personal growth, learning, and development (Demerouti &Bakker, 2011). Job resources are essential determinants of positive motivational states, such as high work engagement and organizational commitment (e.g., Schaufeli et al., 2009). However, when job demands exceed job resources, it can lead to detrimental mental health outcomes (Rosario-Hernández et al., 2013).

Past research has evidenced that job-related demands can have a negative impact on employee's mental health (e.g., Santa Maria el al., 2017). More recently, findings have pointed towards a potential negative effect of the increased work due to the COVID-19 pandemic on workers psychological well-being (Kisely et al., 2020; Lan, et al., 2020) including psychological distress, anxiety, depression, and insomnia symptoms (Lai et al., 2020). On the other hand, Ghislieri et al. (2021) found that COVID-19 cognitive work demands were a predictor of work-family conflict due to difficulties in separating different living domains, the pervasiveness of technology, and diminished opportunities for recovery; therefore, WFCDC remains a prominent concern, all while addressing new, growing job expectations during this pandemic of COVID-19. Considering this, we propose the following hypotheses:

> H_1: COVID-19 work demands is positively related to WFCDC (H_{1a}), general psychological distress (H_{1b}), anxiety (H_{1c}), and depression (H_{1d}).

However, whereas work demands are linked to unfavorable health outcomes, there are resources that are associated to positive health outcomes. Hence, job and personal resources may be functional in meeting work demands and thus reduce the associated physiological and/or psychological costs (Bakker, 2011; Demerouti & Bakker, 2011). Job and personal resources are motivating and contribute positively to employees' health and well-being (Demerouti & Bakker, 2011). Therefore, we also propose the following hypotheses:

> $H_{2\text{-}3}$: Job and personal resources are negatively related to WFCDC ($H_{2a\text{-}3a}$), general psychological distress ($H_{2b\text{-}3b}$), anxiety ($H_{2c\text{-}3c}$), depression ($H_{2d\text{-}3d}$).

Finally, previous research has also demonstrated that job and personal resources are not just linked to stress resilience, but also to physical and emotional well-being (Scheier & Carver, 1992). Research has shown that individuals generalize their work learning experiences to fit their off-job situations (Kohn & Schooler, 1982). Accordingly, we propose the following hypotheses:

> $H_{4\text{-}5}$: Job and personal resources mediate the relationship between CWD and WFCDC ($H_{4a\text{-}5a}$), CWD and general psychological distress ($H_{4b\text{-}5b}$), CWD and anxiety ($H_{4c\text{-}5c}$), CWD and depression ($H_{4d\text{-}5d}$).

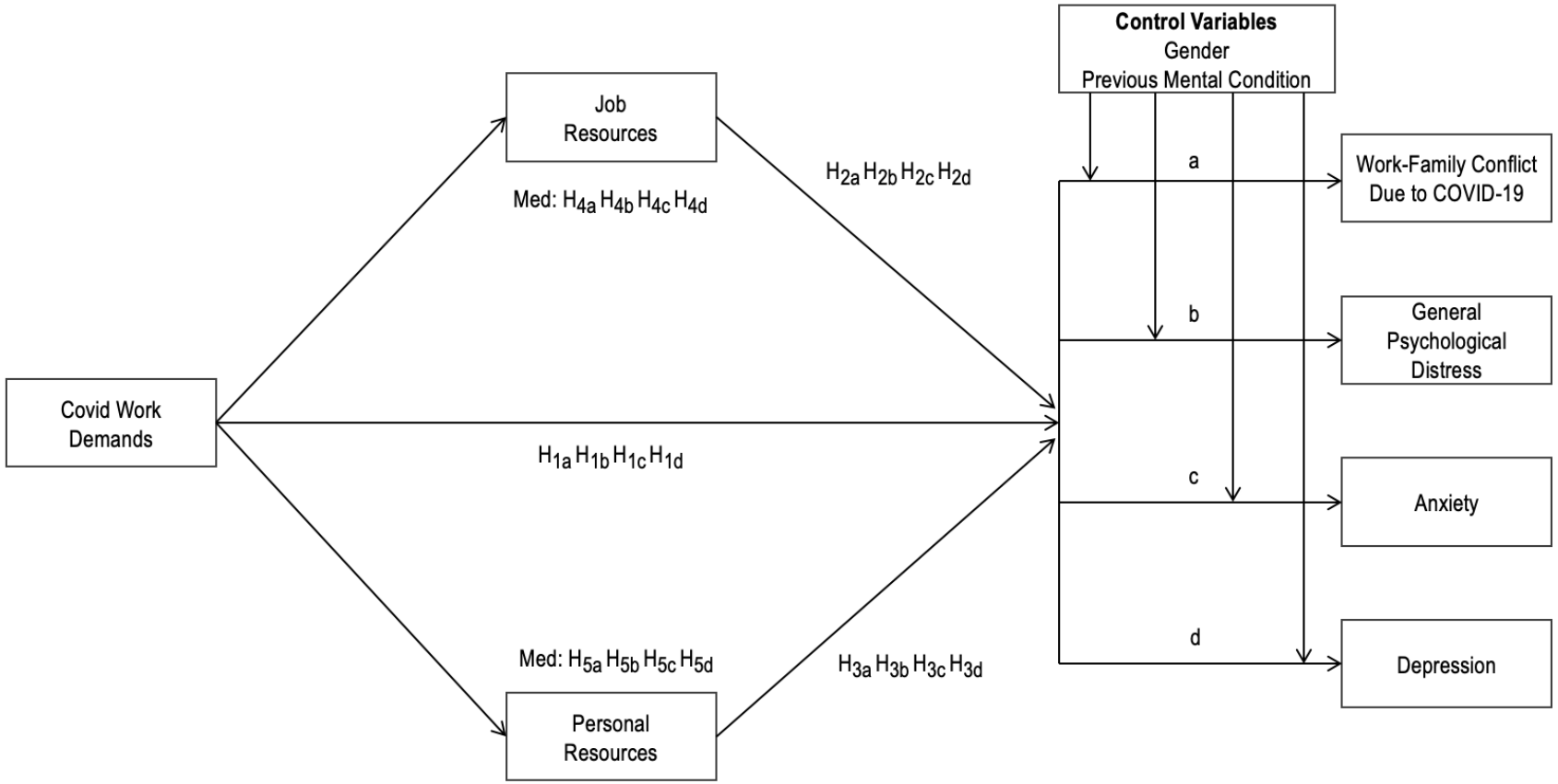

FIGURE 1.
Proposed Research Model. Authors' own elaboration.

METHOD

Participants

This is an ongoing longitudinal study with a convenience sample of 161 essential non-health care workers who participated in this ongoing study. Results presented in this study correspond to the baseline phase of this study, thus they are preliminary findings. Participants were recruited between August and December 2020. Participants were enrolled from different private and public organizations in Puerto Rico via online media platforms, such as Facebook, Instagram, among others. The data of the reference sample show that 74.5% (120) were females and 25.5% (41) males. No participant identified themselves with other gender in this study. A total of 141 participants (87.6%) worked for a private organization while the remaining (12.4%) worked for a public organization (Table 1).

TABLE 1.
Socio-demographic information about the participants of the study.

Variable	*freq.*	*%*
Gender		
Females	120	74.5
Males	41	25.5
Education		
High School	13	8.1
Technical	7	4.3
Undergraduate	98	60.9
Graduate	43	26.7
Sector		
Public	20	12.4
Private	141	87.6
Where are you working?		
In my usual workplace	113	70.2
At Home	13	8.1
Both (usual workplace & at home)	28	17.4
Other	7	4.3
PE Provide by Organization		
Completely Insufficient	7	4.3
Very Insufficient	6	3.7
Somewhat Insufficient	32	19.9
Somewhat Sufficient	70	43.5
Very Sufficient	32	19.9
Completely Sufficient	14	8.7
Have you received information about Covid-19?		
No	8	5.0
Yes, at my workplace	100	62.1
Yes, but not at my workplace	53	32.9
I do have a reliable network of co-workers that support me		
Completely Disagree	10	6.2
Moderately Disagree	8	5.0
Somewhat Disagree	15	9.3
Somewhat Agree	56	34.8
Moderately Agree	37	23.0
Completely Agree	35	21.7
Previous mental condition before Covid-19?		
No	144	89.4
Yes	13	8.1
Prefer not to answer	4	2.5
How worried are you to get infected?		
Not Worried at All	2	1.2
Slightly Worried	19	11.8
Moderately Worried	71	44.1
Extremely Worried	69	42.9
How worried are you about infecting your loved ones?		
Not Worried at All	13	8.1
Slightly Worried	38	23.6
Moderately Worried	52	32.3
Extremely Worried	58	36.0
How confident are you that your workplace can handle the Covid-19 pandemic?		
Completely Distrustful	27	16.8
Moderately Distrustful	27	16.8
Somewhat Distrustful	32	19.9
Somewhat Trustful	27	16.8
Moderately Trustful	36	22.4
Completely Trustful	12	7.5
How confident are you that government can handle the Covid-19 pandemic?		
Completely Distrustful	72	44.7
Moderately Distrustful	28	17.4
Somewhat Distrustful	33	20.5
Somewhat Trustful	20	12.4
Moderately Trustful	8	5.0
Completely Trustful	0	0.0
I do have a reliable network of loved ones who support me (family, friends, etc.)		
Completely Disagree	5	3.1
Moderately Disagree	0	0.0
Somewhat Disagree	1	0.6
Somewhat Agree	22	13.7
Moderately Agree	31	19.3
Completely Agree	102	63.4
Have you tried to take the Covid test?		
No	87	54.0
Yes, but I have not been able to take the test	8	5.0
Yes, I have taken the test	66	41.0

Note. n = 161.

Materials

Socio-demographic questionnaire. We developed a background questionnaire to gather general demographic information about participants. The questionnaire included information about gender, age, tenure, marital status, among others.

COVID Work Demands (CWD). We developed a five-item questionnaire in Spanish to measure work demands due to the COVID-19 pandemic on a six-point Likert Scale, in which 1 is "Totally Disagree" and 6 is "Totally Agree." We intended to measure work demands that the COVID-19 has brought to workplaces during the pandemic. COVID-19 work demands items are: (1) "My job requires more concentration than ever before to avoid getting COVID-19", (2) "I must try so that my work does not affect me emotionally because every day I go out to work may be the day that I get infected with COVID-19", (3) "In my job, I am being demanded more than normal due to the COVID-19 pandemic", (4) "It causes me stress to work having to handling objects or things (e.g., boxes, products, garbage, etc.) without first being able to disinfect them after other people previously handled it", and (5) "It causes me stress to work because I must serve the public as part of my tasks, and I am worried that I may contract COVID-19". A high score means a higher work demands because of the COVID-19 and vice versa.

Job Resources (JR). We developed this five-item questionnaire in Spanish to measure job resources provide by the organization during the COVID-19 pandemic, such as training, protective equipment, etc., on a six-point Likert Scale, in which 1 is "Totally Disagree" and 6 is "Totally Agree." Job resources items are: (1) "My Company has provided me with training about COVID-19 so that I can do my job safely", (2) "In my work, all they have told me is to be careful, but they have not given me training to do so", (3) "In my work, all they have told me is to be careful, but they have not given me personal protection equipment (PPE) (e.g., masks, gloves, hand sanitizer, etc.) to do so", (4) "My company has provided me with the necessary PPE (e.g., masks, gloves, hand sanitizer, etc.) to do my job in the safest way", and (5) "My company has shown a genuine interest in my safety by supporting me when I do my job". A high score means a higher job resources and vice versa.

Personal Resources (PR). We developed a five-item questionnaire in Spanish to measure personal resources that an individual must face the COVID-19 pandemic on a six-point Likert Scale, in which 1 is "Totally Disagree" and 6 is "Totally Agree." Personal resources items are: (1) "I have searched all the necessary information about COVID-19 in order to take the necessary precautions and carry out my work in the safest possible way", (2) "I have created a system to disinfect myself when I do my job", (3) "I have had to search on my own for personal protective equipment (e.g., masks, gloves, hand sanitizer, etc.) to protect myself from COVID-19", (4) "I have created a system to disinfect myself when I get home from work to avoid infecting my loved ones with COVID-19", and (5) "I feel I can't handle my emotions and fear of getting COVID-19 while doing my job". A high score means a higher personal resources and vice versa.

Work-Family Conflict Due to COVID-19 (WFCDC). We developed a five-item questionnaire in Spanish to measure work-family conflicts due to the COVID-19 pandemic on a six-point Likert Scale, in which 1 is "Totally Disagree" and 6 is "Totally Agree." We intended to measure this construct is based on role theories (Merton & Merton, 1968) and Goode's role strain (Goode, 1960), which states that each function involves an investment of time and energy; given limited individual resources, managing several roles may result in inter-role conflict, implying incompatibility between work and family responsibilities (Greenhaus & Beutell, 1985). WFCDC items are: (1) "I must go out to work because of the need to provide for my family, but at the same time I am concerned that

doing so puts me at risk of contagion and in turn can also infect them", (2) "I wish I could stay home with my family during the COVID-19 pandemic to avoid possible contagion, but I need going to work", (3) "It is difficult for me to go out to work with the possibility of getting COVID-19 and returning to my home infected without knowing it and infecting my family", (4) "My family does not want me to go out to work for fear of contagion with COVID-19 and in the same way to infect them, but I have a need to do so", and (5) "My family members have expressed their discomfort at me going out to work for fear of contagion with COVID-19, creating conflicts between us". A high score means a higher WFCDC and vice versa.

General Psychological Distress (GPD). The General Health Questionnaire (GHQ-12; Goldberg et al., 1997) measures the severity of psychological distress experienced within the last 2 weeks. We used the GHQ-12 Spanish version validated by Sánchez-López and Dresch in (2008) in Spain. The respondents answered 12 items on a 4-point Likert scale, from "more than usual" to "much less than usual" for the first six "positive" items and from "no" to "much more than usual" for the last six "negative" items (Cronbach's alpha = .87). Higher values correspond to higher psychological distress.

Generalized Anxiety Disorder Questionnaire. We used the Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006) questionnaire, which is a one-dimensional self-administered measure designed to assess the presence of symptoms of the generalized anxiety disorder, as established in the DSM-IV. The GAD-7 Spanish version has been validated with Puerto Rican samples (Pagán-Torres et al., 2020) with reliability Cronbach's alpha of .92.

Patient Health Questionnaire. We used the eight-item Patient Health Questionnaire (PHQ-8; Kroenke & Spitzer, 2002) to measure depression symptomatology. The PHQ-8 Spanish version has also been validated in Puerto Rico with an internal consistency via Cronbach's alpha fluctuating between .91 to .92 (Pagán-Torres et al., 2020).

Procedures

This study was approved by the Ponce Health Sciences University Institutional Review Board (IRB; #2004036111). Participants were recruited by availability. Recruitment was conducted via online media adds (i.e., Facebook) and through word of mouth in which participants shared the study's REDCap digital link. Those who agreed to participate proceeded to complete the online consent form and the study questionnaires. All participants met the following inclusion criteria: 1) being 21 years old or older, and 2) being an essential non-healthcare worker actively working during the pandemic, such as policemen, firemen, postal employees, store clerks, bagger employees, among others. Exclusion criteria were individuals younger than 21 years of age, non-employed individuals, and health care workers. Answering the questionnaires of the current study took approximately 20 minutes average to be completed. Confidentiality and anonymity were guaranteed since the participants did not have to give information that reveal their identity. No compensation was provided to participants.

Data analysis

For data analysis, partial least squares structural equation modeling (PLS-SEM) was used following the two-step procedure suggested by Hair, Hult, Ringle, and Sarstedt (2017). First, confirmatory factor analysis aimed to assess the measuring model; and secondly, evaluation of the structural model. Following Chin's (2010) suggestion, it is important to mention the three reasons for its use in the present study. Firstly, PLS-SEM has a soft distributional assumption and given that the Kolmogorok-Smirnov and Shapiro-Wilks tests were significant, it suggested that scores were not distributed normally. Secondly, the exploratory nature of the current study (Henseler & Sarstedt, 2013), Lastly, the high model complexity of the study justifies the

use of PLS-SEM because the model tested has multiple mediator variables (Henseler & Sarstedt, 2013). In terms of control variables, we used gender and previous diagnosis of a mental health condition as some literature have suggested that these variables may influence these relationships (e.g., Guillen, et al., 2021; Mohd Fauzi et al., 2020). Gender was coded as female =1 and male = 0. Meanwhile, previous mental disorder was coded as "Yes" = 1 and "No" = 0.

RESULTS

The research model of Figure 1 was analyzed using Smart-PLS 3.2.4, a PLS structural equation-modeling tool (Ringle, Wende, & Becker, 2015). It assesses the psychometric properties of the measurement model and estimates the parameters of the structural model. This tool enables the simultaneous analysis of up to 200 indicator variables, allowing the examination of multiple mediator variables simultaneously among latent predictor variables indicators.

The measurement model

The data indicates that the measures are robust in terms of their internal consistency reliability as indexed by Cronbach's alpha and composite reliability. All the Cronbach's alphas and the composite reliabilities of the different measures range from .70 to .94, which exceed the recommended threshold value of .70 (Hair et al., 2017). In terms of the validity, as seen in table 2, most outer loadings reached the threshold of .70 (see table 2).

TABLE 2.
Outer loadings, average variance extracted (AVE), and reliability using Cronbach's alpha (œ) and composite reliability (CR).

Measure	Item	Outer Loadings	AVE	Cronbach's Alpha	Composite Reliability
COVID Work Demands (CWD)	CWD-2	.81	.58	.76	.85
	CWD-3	.67			
	CWD-4	.80			
	CWD-5	.76			
Job Resources (JR)	JR-6	.65	.55	.80	.86
	JR-7	.69			
	JR-8	.78			
	JR-9	.79			
	JR-10	.79			
Personal Resources (PR)	PR-11	.65	.61	.70	.82
	PR-12	.83			
	PR-14	.86			
Work-Family Conflict Due to COVID (WFCDC)	WFCDC-16	.85	.55	.80	.86
	WFCDC-17	.81			
	WFCDC-18	.82			
	WFCDC-19	.65			
	WFCDC-20	.56			
General Psychological Distress (GPD)	GHQ-1	.73	.60	.84	.88
	GHQ-2	.82			
	GHQ-8	.75			
	GHQ-10	.83			
	GHQ-11	.76			
Anxiety (Anx)	GAD7-1	.83	.69	.92	.94
	GAD7-2	.88			
	GAD7-3	.88			
	GAD7-4	.86			
	GAD7-5	.82			
	GAD7-6	.75			
	GAD7-7	.79			

Measure	Item	Outer Loadings	AVE	Cronbach's Alpha	Composite Reliability
Depression (Dep)	PHQ8-1	.71	.59	.89	.91
	PHQ8-2	.82			
	PHQ8-3	.79			
	PHQ8-4	.81			
	PHQ8-5	.78			
	PHQ8-6	.73			
	PHQ8-7	.75			

In addition, the average variance extracted (AVE) for each measure exceeds .50, which is an indication of the convergent validity of the measures (Fornell and Larcker, 1981). Moreover, the elements in the matrix diagonals, representing the square roots of the AVE, are greater in all cases than the off-diagonal elements in their corresponding row and column, supporting the discriminant validity of the scales (see table 3 above the matrix diagonals). In terms of establishing the discriminant validity of the measures in the model, we assessed the heterotrait-monotrait ratio (HTMT) of the latent construct's correlations (Henseler et al., 2015). The HTMT approach is an estimate of what the true correlation between two constructs would be if they were perfectly measure. A correlation between to constructs close to one indicates a lack of discriminant validity. Therefore, a threshold value of .90 if the path model includes constructs that are conceptually very similar. Also, since the HTMT can serve as the basic of a statistical discriminant validity test the use of bootstrapping technique is used to derive a bootstrap with a 95% confidence interval with 5,000 random subsamples. In this study, none of the correlations between the constructs in the bootstrapping 95% confidence interval included the value of one; suggesting that the constructs are empirically distinct (see supplementary Table S1 below the matrix diagonals).

The structural model

After the measurements were tested for validity, the structural model as provided in Figure 1, which represent the relations among the constructs assumed in the theoretical model or latent variables, was tested (see Table 4). To examine the structural model, we first checked the for-collinearity issues by examining the variance inflation factor (VIF) value of all sets of predictor constructs in the structural model. They fluctuated between 1.029 and 1.243, all VIF values are clearly within the threshold range of 0.20 and 5.00; therefore, collinearity among predictor constructs is not a critical issue in the structural model (see table 4). In addition, Table 4 shows the R2 values of WFCDC (.383), GPD (.243), anxiety (.253) and depression (.243), explaining 38.3%, 24.3%, 25.3% and 24.3% of the variance, respectively. Falk and Miller (1992) suggest a value of .10 for an R-squared as minimum satisfactory level; all endogenous latent variables possess the threshold level of R-squared values. Moreover, R2 decomposition shows that CWD explained most of the variance of all endogenous latent variables, 29.3% of 38.3% on WFCDC, 19.7% of 24.3% on GPD, 15.2% of 25.3% on anxiety, and 12.4% of 24.3% on depression. In addition, all Q2 values of WFCDC, GPD, anxiety and depression are above zero (.194, .103, .114 & .078, respectively), providing support of the model's predictive relevance regarding the endogenous latent variables. The effects sizes for CWD achieved f2 values of .326, .229, .147, & .157 on WFCDC, GPD, anxiety, and depression, respectively, which exceeds the minimum threshold of .02 (Chin, Marcolin, & Newsted, 2003). While effect sizes for job and personal resources only exceed the minimum threshold on the endogenous variables of WFCDC and depression, respectively (see supplementary Table S2).

Regarding results of the direct effects (see Figure 2 & Table S3), CWD had positive and

significant relations to WFCDC (*b* = .500, *p* < .001), anxiety (*b* = .370, *p* < .001), and depression (*b* = .385, *p* < .001); on the other hand, CWD had negative and significant relationship to GPD (*b* = -.463, *p* = < .001). Meanwhile, job resources only had a significance and negative relationship to WFCDC (*b* = -.142, *p* = .023) and non-significance relationships to GPD (*b* = -.090, *p* = .193), anxiety (*b* = -.070, *p* =.255), and depression (*b* = .058, *p* = .287). Finally, personal resources only had a significance and negative relationship to depression (*b* = -.223, *p* = .004) and non-significance relationships to WFCDC (*b* = .095, *p* = .126), GPD (*b* = .121, *p* = .058), and anxiety (*b* = -.015, *p* = .422). Regarding the control variables, gender did not significantly relate to any of the latent endogenous variables; on the other hand, previous mental condition significantly related to GPD (*b* = -.205, *p* = .004), anxiety (*b* = .251, *p* < .001), and depression (*b* = .313, *p* < .001), except to WFCDC (*b* = .067, *p* = .064). The decomposition of R^2 of previous mental condition explained 4.4%, 7.0%, and 9.9% of the variance of GPD, anxiety, and depression, respectively.

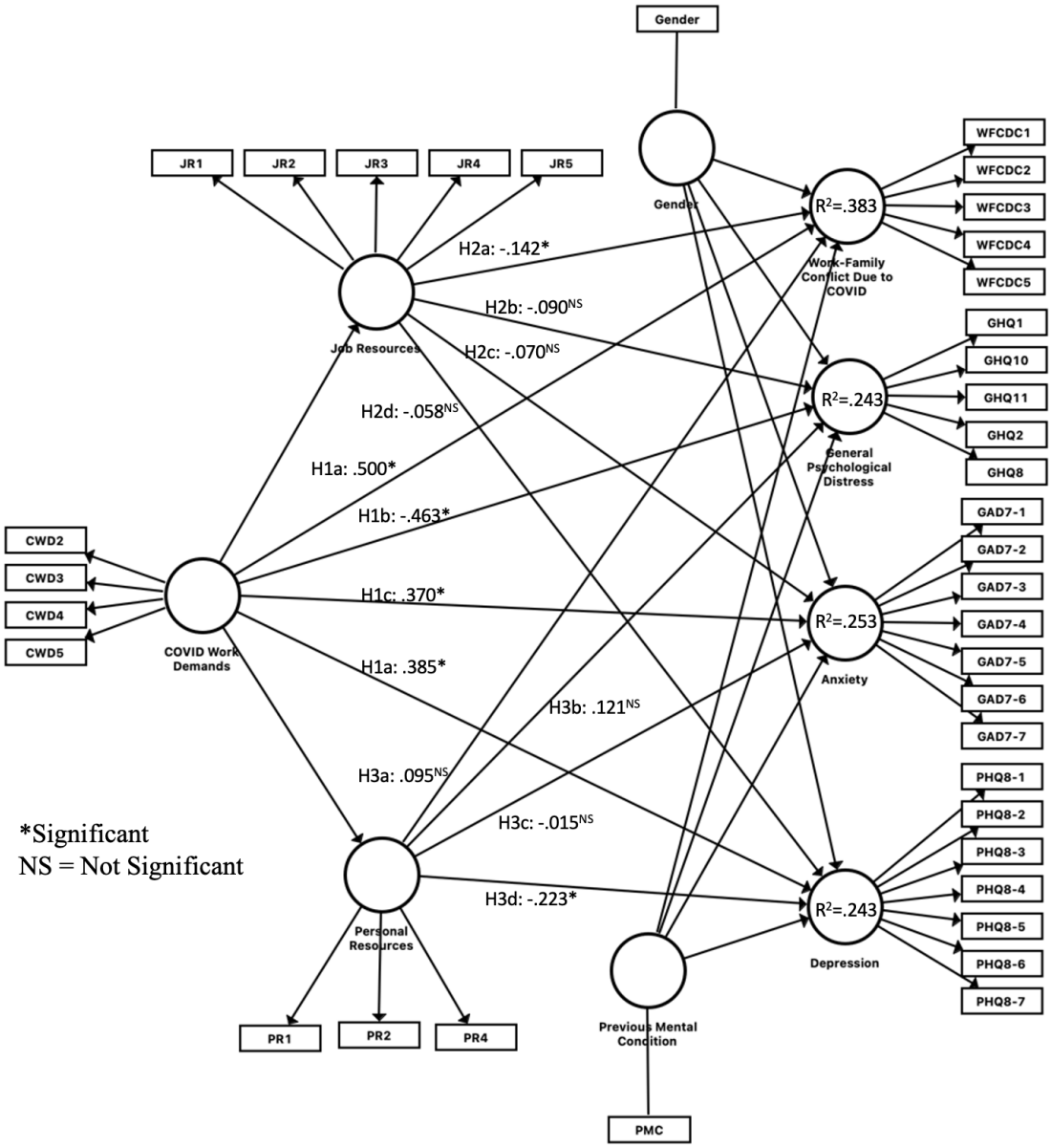

FIGURE 2.
Direct effect results.

In terms of the mediating role of resources, JR did not mediate any path, but PR significantly mediated the relationship between CWD and depression (IE = -.061; see supplementary Table S4). Since this indirect effect was significant, it is important to mention that CWD has a significant and positive direct effect on PR (b = .274, p < .01), contrary as what should be expected. This result needs to be considered when interpreting the indirect effect PR between the relationship between CWD and depression.

DISCUSSION

This study examined the impact of the COVID-19 pandemic on ENHC workers in Puerto Rico by examining perception of job demands and resources (i.e., job & personal) its impact on work-family conflict and psychological well-being. Moreover, we examined the mediating role of resources in the relationship between job demands and work-family conflict and psychological well-being. To the best of our knowledge, this is the first study to explore the impact of working during the COVID-19 pandemic and its consequences on work-family interface and psychological well-being of ENHC workers using the JD-R model.

Firstly, our preliminary findings provide evidence about high job demands faced by ENHC workers and, how this high job demands can deteriorate their psychological well-being. The burden that job demands put on the psychological well-being, especially on the work-family interface during the COVID-19 pandemic, is consonant with the some of the literature (e.g., Lan et al., 2020; Lin Toh, et al., 2021; Moreno-Jiménez et al., 2021). Our hypothesis 1 findings suggest that CWD has a significant direct effect on all endogenous variables tested, especially on WFCDC and GPD as seen on its notable effect's sizes of .326 and .229, respectively. Evidence suggest that the inter-role conflict of work-family posed on employees is stronger during the COVID-19 pandemic than before. For example, employee's need to continue working is at conflict with their emotions, particularly their fear of contagion and of infecting loved ones. Therefore, this spillover during the COVID-19 pandemic seem to be aligned with previous literature suggesting the influence of work-family conflict (APA, 2020; Baeriswyl et al. 2016). Our findings also echo Rigotti et al. (2020) regarding how worker's additional COVID-19 precautions can be considered as a substantial stressor for workers and their families as well as work and family compete for limited resources, time, and in particular, energy.

Job and personal resources hypotheses only had significant direct effects on WFCDC and depression respectively. These findings, like other literature, are suggesting the importance of job and personal resources in helping an individual cope with work demands (e.g., Grover et al., 2017). Boudrias et al. (2011) argue that when facing high work demands, workers tend to perceive the organizational environment as less supportive and fair. Our results support the argument of the JD-R model that high JR tends to diminish WCFDC.

Additionally, our results suggest that PR is negatively related to depression, meaning that PR appears to diminish depressive symptomatology. Some literature has proposed that core self-evaluations, such as personal resources, are the most important determinants of employee adaptation (Judge et al., 1997), and empirical studies have supported a reciprocal relationship between personal resources and work characteristics (Kohn & Schooler, 1982). These findings align with Xanthopoulou et al. (2007) who indicate that employees with PR are more secure in their abilities and optimistic about their future, and thus can identify or even construct more aspects of their environment that promote goal attainment. Xanthopoulou et al. point out that employees with PR do not expect a reduction in work demands, although it has a negative association with exhaustion, implying that efficacious or positive workers experience less fatigue, while also implying that they are more resistant to adverse conditions.

Finally, our findings suggest that only personal resources significantly mediated the relationship between CWD and depression. This result is consonant with the JD-R model as well as with some literature suggesting that job resources prevent or buffer negative consequences such as depression (De Carlo et al., 2019). Interestingly, the mediating role of PR is considered a competitive mediation because the indirect effect and the direct effect both are significant and point in opposite directions (Hair et al., 2017). This means that PR serve as a suppressor in the relationship between CWD and depression (MacKinnon et al., 2000). This may suggest that as work demands are high (as is the case during the COVID-19 pandemic) PR increases. According to Cavanaugh et al. (2000), there are two types of stressors, namely challenge stressors and hindrance stressors. Although, both types of stressors increase job strain, challenge stressors can motivate employees and promote positive work outcomes, whereas hindrance stressors are demotivating and detrimental to work outcomes, according to Cavanaugh et al. (2000) (e.g., Lepine et al., 2005).

Theoretical and Practical Implications

This is the first study in Puerto Rico that addresses the impact of the COVID-19 pandemic among essential non-health care workers and one of the first globally to examine this issue using the JD-R model. We concur with Moreno-Jiménez et al. (2021) whom indicate that it is necessary to emphasize the need of prevention and the potential long-term impact of this problem. Primarily, prevention needs the development of theoretically informed models to describe the relevant risk variables that affect ENHC workers health. The use of the JD-R model in this study gives it a valuable foundation as it allows categorizing demands and resources and therefore helping to understand these processes. Next steps should include the development of interventions to foster specific job resources, such as material resources (e.g., personal protective equipment) and staff reinforcements, as well as more coworker and supervisor support. Increasing job resources may result in reduced workload and fear of infection, thereby protecting worker's psychological well-being.

Strengths, Limitations, and Suggestions for Future Research

This study has some limitations that need to be noted. First, this study has a longitudinal design with a relatively small convenience sample, which hampers the generalizability of the findings at the baseline phase. In addition, we did not manipulate any of the variables due to the baseline nature of our design in this early phase of the study that limits the use of causal inferences. Additionally, we relied on self-report data, which may inflate the associations between variables through common method variance (Podsakoff et al., 2003). However, we tested for common method variance following Kock (2015) recommendations using the collinearity variance inflation factor (VIF) criterion and all variables were less than the threshold of 3.3, suggesting than this was not a problem in the current study. Beyond those limitations, the main strength of the current study is the theoretically grounded approach of addressing work stress caused by the COVID-19 pandemic using the JD-R model. This addresses a current gap in the COVID-19 pandemic related research and occupational health, especially in ENHC workers.

Conclusions

This study examined the impact of the COVID-19 pandemic on essential non-health care workers in Puerto Rico by examining perception of job demands and resources (i.e., job & personal) and its impact on work-family conflict and psychological well-being. We found that COVID-19 work demands have a significant direct effect on all variables tested, particularly on work-family conflict and general psychological distress. Furthermore, job resources and personal resources had significant direct effects on work-family conflict and depressive symptomatology, respectively. However, only personal re-

sources mediated the relationship between COVID-19 work demands and depressive symptomatology. The JD-R model, according to our findings, can be used to better understand current occupational health issues during the ongoing COVID-19 pandemic, and organizations must intervene to assist workers in restoring a balance between job demands and resources.

Research Ethical Standards

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