

# Anxiety and coping strategies during the Covid-19 pandemic: The mediating role of positive attitudes at work

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## Abstract

The world has been monitoring the emergence and advancement of COVID-19, which has mobilized the scientific community with the purpose of expanding our understanding about the disease. With regard to workers, the concern with their mental health during and after the pandemic stands out. In this connection, this investigation aimed to understand the direct effects of anxiety on stress-coping strategies in Brazilian workers during the COVID-19 pandemic, as well as the mediating role of general attitudes about work in such a relationship. The study included 339 workers of both genders (73% female) and from different professions. The results indicated that general positive attitudes about work mediated the relationship between anxiety and stress-coping strategies focused on the issue. The implications for carrying out interventions with workers in times of pandemic are discussed.

**Keywords:** pandemic; attitudes at work; anxiety; coping strategies.

## Resumo

*Ansiedade e estratégias de enfrentamento do estresse durante a pandemia da Covid-19: a mediação das atitudes positivas sobre o trabalho.* O mundo acompanha o surgimento e o avanço da COVID-19, o que tem mobilizado a comunidade científica a ampliar o conhecimento sobre a doença. No que tange aos trabalhadores, destaca-se a preocupação com sua saúde mental durante e após a pandemia. Nesse sentido, a presente pesquisa teve como objetivo investigar os efeitos diretos da ansiedade sobre as estratégias de enfrentamento do estresse em trabalhadores brasileiros, durante a pandemia da COVID-19, bem como o papel mediador das atitudes gerais sobre o trabalho em tal relação. Participaram do estudo 339 trabalhadores de ambos os sexos (73% do sexo feminino) e de diversas profissões. Os resultados indicaram que as atitudes positivas gerais sobre o trabalho mediaram a relação da ansiedade com as estratégias de enfrentamento do estresse focadas no problema. Implicações para a realização de intervenções junto aos trabalhadores em momentos de pandemia são discutidas.

**Palavras-chave:** pandemia; atitudes no trabalho; ansiedade; estratégias de coping.

## Resumen

*Ansiedad y estrategias de afrontamiento durante la pandemia del Covid-19: El papel mediador de las actitudes positivas en el trabajo.* El mundo está siguiendo la aparición y el avance de COVID-19, que ha movilizó a la comunidad científica para expandir el conocimiento sobre la enfermedad. Con respecto a los trabajadores, destaca la preocupación por su salud mental durante y después de la pandemia. En este sentido, la presente investigación tuvo como objetivo investigar los efectos directos de la ansiedad sobre las estrategias de afrontamiento en los trabajadores brasileños durante la pandemia de COVID-19, así como el papel mediador de las actitudes generales sobre el trabajo en Tal relación. El estudio incluyó a 339 trabajadores de ambos sexos (73% mujeres) y de diversas profesiones. Los resultados indicaron que las actitudes positivas generales sobre el trabajo mediaron la relación entre la ansiedad y las estrategias para enfrentar el estrés centradas en el problema. Se discuten las implicaciones para llevar a cabo intervenciones con trabajadores en tiempos de pandemia.

**Palabras clave:** pandemia; actitudes en el trabajo; ansiedad; estrategias de afrontamiento.

The world has been monitoring the emergence and advancement of the coronavirus (SARS-CoV-2) syndrome, more popularly known as COVID-19. The first cases of virus infection were registered in China in late 2019, and they quickly spread to other countries, until on March 11, 2020, the World Health Organization (WHO) declared its pandemic character. The clinical framework of the disease varies from asymptomatic infections to severe respiratory conditions, which may require hospital care and support for the treatment of respiratory failure (Ministério da Saúde, 2020a).

Many characteristics of COVID-19 are still unknown and, for this reason, several studies have been conducted to expand information on the epidemiology of the virus, the course of the disease and its prevention and treatment strategies (Oliveira, Oliveira-Cardoso, Silva, & Santos, 2020). Other studies have sought to understand the impacts of the new COVID-19 and its main consequences in different life aspects of individuals, on their relationships and on society as a whole, especially with regard to the areas of education, work and economy (Moya et al., 2020).

According to the Epidemiological Bulletin number 42, dated October 21, 2020, COVID-19 had infected to that date 39,425,546 people worldwide, with more than 1,105,403 deaths. In Brazil, about 5,224,362 confirmed cases were recorded to that date. Of this total, 153,675 were fatal cases and 4,635,315 individuals recovered from the disease (Ministério da Saúde, 2020b). These data show the clinical severity and high transmissibility of the disease, as verified by Freitas, Napimoga and Donalisio (2020), when carrying out the Covid-19 Pandemic Severity Assessment in countries at an early stage of the epidemic.

Different strategies to contain the disease have been recommended by experts and adopted by national and international authorities (Ferguson et al., 2020). To date, one of the most frequently indicated strategy is quarantine, which refers to restricted movement or separation of healthy individuals from the rest of the population which may have been exposed to the virus (Brooks et al., 2020).

Such a measure is often associated with an unpleasant experience for those who experience it, since it may involve restriction of coexistence between people, lack of correct information about the situation, financial losses, uncertainty about the disease and the future, fear of self-infection or of infecting family members and feeling of frustration due to routine disruption (Brooks et al., 2020).

Thus, it can cause individuals to experience boredom, loneliness and anger (Carvalho, Moreira, Oliveira, Lanim, & Neto, 2020), in addition to having their well-being levels affected (Horesh & Brown, 2020). As a result, it can cause stress, depression and anxiety (Wang et al., 2020). On the other hand, quarantine can also trigger the use of positive and / or negative coping strategies in relation to such stressful situations (Umucu & Lee, 2020). In other words, the pandemic and quarantine can exacerbate existing mental health disorders, but also resilience to the profound loss caused by them (Horesh & Brown, 2020).

Regarding workers, many changes have occurred. Some turned unemployed and, as a result, the number of informal activities increased. In addition, many had to experience compulsory home working, while others, such as health professionals, saw their routines and workloads changing dramatically, which undoubtedly reflects in their stress and anxiety experience (Gondim & Borges, 2020). Workers therefore had to resort to a continuous adaptation effort to these new conditions, through the adoption of individual coping strategies that would allow them to deal more effectively with stress and anxiety generated by such adverse conditions. In view of these considerations, one of the objectives of this study was to investigate the relationship between anxiety and stress-coping strategies adopted by Brazilian workers, in the framework of the COVID-19 pandemic.

Additionally, this study intended to ascertain the indirect effects of anxiety on stress-coping strategies, through the mediation of general positive attitudes about work. In this way, such attitudes were considered as personal resources (Hobfoll, 1989) that interpret stressful situations as a threat to their own resources, which will lead to the adoption of coping strategies capable of minimizing such situations.

As COVID-19 is a very recent condition in today's society, there are still a number of gaps in the studies, especially with regard to its possible psychological implications. The present study therefore represents an attempt to fill these gaps, by trying to understand the way in which Brazilians' cognitions and feelings about work interfere with their feelings and behaviors in the face of the pandemic and quarantine.

## **Anxiety and workers' coping strategies in the framework of the COVID-19 pandemic**

Anxiety is the experience of negative feelings related to concerns, tensions and insecurity, while the

absence of such a state is associated with positive feelings of well-being, satisfaction and happiness (Fioravanti, Santos, Maissonette, Cruz, & Landeira-Fernandez, 2006). Stress and anxiety are most often present in quarantine contexts, as they lead individuals to realize that their plans for the immediate future have suddenly and dramatically changed. Thus, greater concerns about the individuals' health and self well-being, as well as those of their family and loved ones emerge (Huremović, 2019).

In this way, a study on the psychological results observed during and shortly after a quarantine situation found that 7% of the population surveyed showed symptoms of anxiety and 17%, feelings of anger. In the six months following quarantine, however, the symptoms of anxiety had been reduced to 3% and those of anger to 6% (Jeong et al., 2016).

With regard to workers, another aspect that can cause stress and anxiety during the quarantine period concerns the fact that many of them are experiencing compulsory home working (distance working, remote and at home activities) (Pérez-Nebra, Carlotto, & Sticca, 2020), to which they were not accustomed. Other workers are also experiencing overload and intensification of work due to shortage of colleagues who are ill (Schmidt, Crepaldi, Bolze, Neiva-Silva, & Demenech, 2020), and the consequent increase of the demands on them (Gondim & Borges, 2020).

However, the symptoms of stress and anxiety are present not only among quarantined workers, but also among those who have not interrupted their on-the-job work, as is the case, for example, of health professionals. In this connection, studies carried out with Chinese health professionals indicated a significant increase in their stress and anxiety symptoms, among others, motivated mainly by the changes introduced in their work routines, such as the increase in the number of hours worked and the increase in recommendations regarding the use of Personal Protective Equipment (PPE) (Lai et al., 2020; Wong et al., 2020; Xiao, 2020).

Quarantine and the intensification of work caused by remote activities and/or by workplace activities, due to the COVID-19 pandemic, as well as the higher levels of stress and anxiety resulting from the disease, have led workers to use coping strategies to face such adverse conditions, as a way of adapting to this new scenario. In other words, workers have sought to develop psychological efforts to manage the demands and the consequent stress and anxiety they have been subjected to, due to the pandemic.

According to the Transactional Theory of Stress and Coping (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984), individuals establish relationships with their environment from two transactional processes: cognitive assessment and coping. Cognitive assessment concerns the judgment of environmental events and takes place through primary and secondary assessment. In the primary phase, individuals assess the event consequences on their well-being as positive, irrelevant or negative. If those consequences are perceived as positive or irrelevant, that is, if they are considered not to exceed the resources that the individual has available to deal with the situation, the assessment of the event is limited to this stage. However, if the event is assessed as negative, that is, if it is associated with a stress-generating situation, the individual then moves on to the secondary assessment phase, in which he/she will consider coping strategies that should be used to change the situation. In other words, the individuals, when interpreting their environment, decides to use strategies to cope with the situation that is causing them stress (Tamayo, Mendonça, & Silva, 2012).

Coping strategies therefore involve cognitive and behavioral efforts aimed at handling internal or external demands, which are assessed as overloads on the individual's characteristics (Folkman, Lazarus, Gruen, & De Longis, 1986). They are subdivided into strategies focused on emotion and strategies focused on the problem (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984). The first type of coping seeks to regulate the emotional response triggered by a stressor, through defensive processes and confrontation avoidance coping, which tend to be less effective in reducing stress. In using this type of strategy, the individual tends, for example, to blame himself or to find culprits for the situation, to show anger towards people who caused the problem or to turn away from people in general.

The coping strategy focused on the problem, in turn, concerns the adoption of active strategies to approach the stressor, such as, for example, planning and solving problems, as well as directing efforts towards alternative solutions, which usually prove more effective in reducing stress (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984). In this connection, the individual seeks to face the situation in stages, increases efforts to be successful, changes some situation so that it has better results and tends to take into account the positive side of the problem.

Talidong and Toquero (2020) investigated the experiences, attitudes and practices of Filipino teachers

when coping with anxiety during quarantine, especially with the new challenges imposed by emerging online education, for which they had not been trained. The authors noted that the main strategies adopted by teachers included spending more time with social media; carry out new activities they liked; spend more time with the family; seek spiritual guidance; frequent access to reliable information about the disease (84%).

The participants of Talidong and Toquero (2020) investigation in order to reduce anxiety, sought therefore to resort to strategies to combat stress focused on the problem. Thus, in a manner consistent with the Transactional Theory of Stress and Coping (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984), they adopted cognitive and behavioral strategies to approach the stressor, in seeking to find successful ways to manage it actively and thereby reduce the anxiety experienced. With the support of this framework, the following research hypothesis was formulated: anxiety is negatively associated with stress-coping strategies focused on the problem (H1).

### **The mediating role of work attitudes in relation to anxiety and stress-coping strategies in the framework of COVID-19 pandemic**

In important complementation to the Transactional Theory of Stress and Coping (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984), Hobfoll (1989) proposed the Theory of Conservation of Resources, according to which individuals, in the presence of stressful events that can deplete their personal resources, react to such stressors in order to protect them. Personal resources refer to valuable objects (real estate), favorable conditions (quality of life), personality characteristics (self-esteem) and energy for the performance of daily activities (Gil-Monte & Peiró, 1997). According to the this theoretical model, individuals not only invest in their resources, in order to face risk conditions and prevent negative results, but they also strive to preserve and protect them, which usually generates positive results such as, for example, coping and well-being (Hobfoll, 1989). However, active coping strategies focused on the problem, such as, for example, dealing with a situation with the aim of settling it, can also lead to a gain of resources and a decrease in stress factors. Therefore, personal resource management allows

individuals to control and act appropriately in their environment (Hobfoll, Johnson, Ennis, & Jackson, 2003).

In this study, the personal resources adopted were the general attitudes about work. Attitudes consist of a psychological tendency that expresses the favorable or unfavorable assessment of a given entity (Eagly & Chaiken, 1993). More specifically, the general attitudes about work are characterized as global assessments that express the feelings and positive or negative beliefs of individuals about the different situations and circumstances involved in their work (Judge & Kammeyer-Mueller, 2012).

Positive attitudes about work can therefore be seen as favorable beliefs about the work itself and its context, which motivate not only the employees themselves, but also their colleagues, to seek to achieve their work goals (Judge & Kammeyer-Mueller, 2012). Two positive attitudes about work are frequently studied in the organization literature, namely job satisfaction (positive feelings of joy and contentment about work; Locke, 1969) and commitment to work (link with the organization which is expressed in bonds of affection, loyalty and the intention to continue in the organization (Allen & Meyer, 1990).

Regarding the antecedents of these constructs, stress at work has been seen as a factor that negatively impacts positive attitudes about work. Thus, physical, interpersonal and organizational stressors have been shown to be negatively associated with job satisfaction and organizational commitment (Kinicki, McKee-Ryan, Schriesheim, & Carson, 2002; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). Regarding the consequences of attitudes about work, several studies have pointed out the beneficial effects of job satisfaction and organizational commitment in the outbreak of work behaviors such as task performance, creative performance and organizational citizenship behaviors (Judge & Kammeyer-Mueller, 2012).

Considering that stress at work has a negative impact on certain positive attitudes about work, it is possible to assume that stress situations not specifically related to the work context can also generate anxiety and negatively impact the general positive attitudes about work. Otherwise, it is also possible to assume that such attitudes may trigger behaviors not directly associated with the workplace, such as, for example, coping behaviors in stressful situations.

In other words, it is possible that anxiety caused by stress resulting from the currently experienced

condition of COVID-19 negatively affects general positive attitudes about work and that these attitudes, in turn, positively impact stress coping strategies focused on the problem, that is, that general positive attitudes about work mediate the relationship between anxiety and coping strategies. This assertion is based on the Theory of Conservation of Resources (Hobfoll, 1989) and on the assumption that stress generated by the pandemic situation will cause anxiety and signal to individuals that such a situation may consume some of their personal resources, as is the case of their general positive attitudes about work. With this, they will react to this situation and, as a way to protect their resources and preserve them, they will adopt stress-coping strategies focused on the problem, in order to settle the stressful situation. However, when they show anxiety and are faced with negative attitudes towards work, coping can be impaired. From these considerations, the following hypothesis was formulated: attitudes at work mediate the relationship between anxiety and stress-coping strategies focused on the problem (H2).

## Method

### Participants

The sample consisted of 339 Brazilian workers of different professions and of both genders (73% female), from all Brazilian regions, mainly from three States: Rio de Janeiro (30.6%;  $N = 102$ ), Minas Gerais (24.6%,  $N = 80$ ) and Roraima (18.9%,  $N = 63$ ). The average age of the participants was 39 years old ( $SD = 11.6$ ). Most of them (59.1%) reported that, in this pandemic situation, they were working remotely; 46.6% were civil servants, 30.3% worked for the private industry, and 23.1% were self-employed, with 7.68 years ( $SD = 8.54$ ) average time of current employment and 15.3 years average total working time ( $SD = 11.8$ ). Most were postgraduates (57.3%;  $N = 193$ ) and 45.7% of the participants reported making between one and three minimum wages.

### Instruments

The State - Trait Anxiety Inventory (STAI) was used to measure anxiety (Fioravanti et al., 2006). The scale consists of 13 items, to be answered on a four-point Likert-type scale, ranging from 1 (absolutely not) to 4 (very much). Example item: I am concerned about unimportant things. The internal consistency presented in the original study was .70.

The individuals' ways of coping with problems were measured using the Problem Coping Scale (EMEP) (Seidl, Trocoli, & Zannon, 2001), consisting of 18 items, to be answered on a five-point Likert-type scale, ranging from 1 (I never do this) to 5 (I always do this). Example item: "I tell myself how much I have already achieved". The internal consistency in the original study was .84.

For the assessment of general attitudes about work, for the purposes of this study, a scale initially composed of 18 items was developed, according to the procedures described by Damásio and Borsa (2017). These items were later reviewed by a group of three judges, specializing in organizational and work psychology, when small adjustments were still made to the initial version of the scale. Example item: "I do everything I am told". With the intention of describing the profile of the sample, a sociodemographic questionnaire was also applied.

### Data Collection Procedures

This investigation was approved by the National Research Council (CAAE 30437320.9.0000.0008) in March 2020. Data collection was carried out in an online format, using a form created in Google Forms, with the prior agreement of the investigation participants and their subsequent filling out of the Free and Informed Consent Form (FICF). Recruitment was carried out through the dissemination of the investigation link on social media platforms, such as WhatsApp, Facebook, Instagram and LinkedIn, in addition to disclosures by e-mails and institutional websites.

### Data Analysis Procedures

In the analysis of the factorial validity of the General Attitudes on Work Scale, the sample was randomly divided into two groups (Damásio & Borsa, 2017), one for the Exploratory Factor Analysis (EFA), using the JAMOVI software, and another, for the Confirmatory Factor Analysis (CFA), through the Structural Equation Modeling, using the software MPlus, version 8.1. The parameters were estimated by the Maximum Likelihood (ML) estimator, with 200 resampling bootstrap.

Subsequently, the CFA was carried out for the other measures of the study, with the adoption of the same criteria mentioned above. Then, the measurement model was verified, initially testing the model with four distinct and correlated factors, in order to ensure that the four latent variables be represented by their relevant items. The internal consistency of each scale was verified using Cronbach's alpha.

After confirming the measurement model, the structural model was analyzed. Following Hayes' directions (2013), the relationship between the independent variable and the dependent variable was initially examined, which must be significant for the confirmation of the model. The mediator variable was then inserted in order to verify whether the predictor variable was related to the mediator variable and whether the latter was related to the dependent variable.

In verifying the fit of the model data, the following indicators were considered: Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root-Mean-Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) (Byrne, 2001). Values below 0.06 for RMSEA and SRMR, and values greater than .95 for CFI and TLI were adopted as good fit rates (Brown, 2015). The probability of error was set at 5%.

## Results

Searching for evidence of the General Attitudes about Work Scale factorial validity, the EFA was initially carried out by means of the extraction of the principal components, and the verification of the adequacy of the correlational matrix, as well as the absence of data multicollinearity and factorability. The KMO indicator was .83. Based on the scree plot and considering the eigenvalues above 2, it was decided to extract two factors using the maximum likelihood method, oblimin rotation. Only items with a factor load greater than .35 (positive or negative) were retained and, for this reason, two items were excluded from the instrument (12 and 17). The final model was therefore composed of two factors (general positive attitudes about work and general negative attitudes about work), with eight items in each, and factorial loads varying between .34 and .76.

The CFA was then carried out by testing two models: a single factor model and a two correlated factors model. The results showed that the adjusted two-factor model presented the best adjustment indexes ( $X^2 [gl] = 411.36 [132]$ , RMSEA = .08, CFI = .87, TLI = .85). The CFAs of the other scales were also carried out, which also showed good fit indexes for their original structures (Table 1).

Subsequently, with the intention of verifying whether the variables were discriminating against each other, the general measurement model was calculated, with the inclusion of all variables proposed in the study. This model was composed of four factors and 46

items, which showed adequate adjustment indexes ( $X^2 [gl] = 2158.94 [1111]$ , RMSEA = .05, CFI = .87, TLI = .86) (Table 1).

**Table 1.** Fit Indexes and Variation of the Factorial Loads of the Tested Models for the Complete Sample (N = 543)

Models	$\chi^2$ (DF)	CFI	TLI	RMSEA	$\Delta$ Factorial Loads
Anxiety (1 factor - 12 items)	137.38 (63)	.96	.95	.06 (.05-.07)	.44-.79
Coping (1 factor - 18 items)	433.37 (130)	.91	.89	.08 (.08-.09)	.38-.77
Work Attitudes (2 factors - 16 items)	761.59 (176)	.70	.66	.12 (.11-.13)	.31-.76
Work Attitudes (1 factors- 16 items)	1086 (104)	.51	.43	.17 (.16-.18)	.30-.76
Work Attitudes - Fit (2 factors - 16 items)	411.36 (132)	.87	.85	.08 (.07-.09)	.30-.77
Complete (4 factors - 46 items)	2158.94 (1111)	.87	.86	.05 (.05-.06)	.31-.78

Notes.  $\chi^2$  = chi-square; DF = degrees of freedom CFI = Comparative Fix Index; TLI = Tucker-Lewis Index RMSEA = Root Mean Square Error of Approximation;  $\Delta$  Factorial load = Variation of Factorial Loads; Adjust = Adjusted.

The internal consistency indexes of the final versions of each instrument, calculated by Cronbach's Alpha, varied from good to excellent. Subsequently, the averages and standard deviations of the scales were calculated, as well as the correlations between them. These results are reported in the Table 2.

**Table 2.** Means, Standard Deviation and Correlations between study variables

	M	SD	1	2	3	4
1. Anxiety	2.12	.68	.90	-.42***	.31***	.55***
2. Problem Focus	3.91	.74	-	.93	-.44***	-.22***
3. Positive Attitudes at Work	3.95	.90	-	-	.87	.20***
4. Negative Attitudes at Work	2.80	.89	-	-	-	.78

Note: The internal consistency of each of the scales is diagonally; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

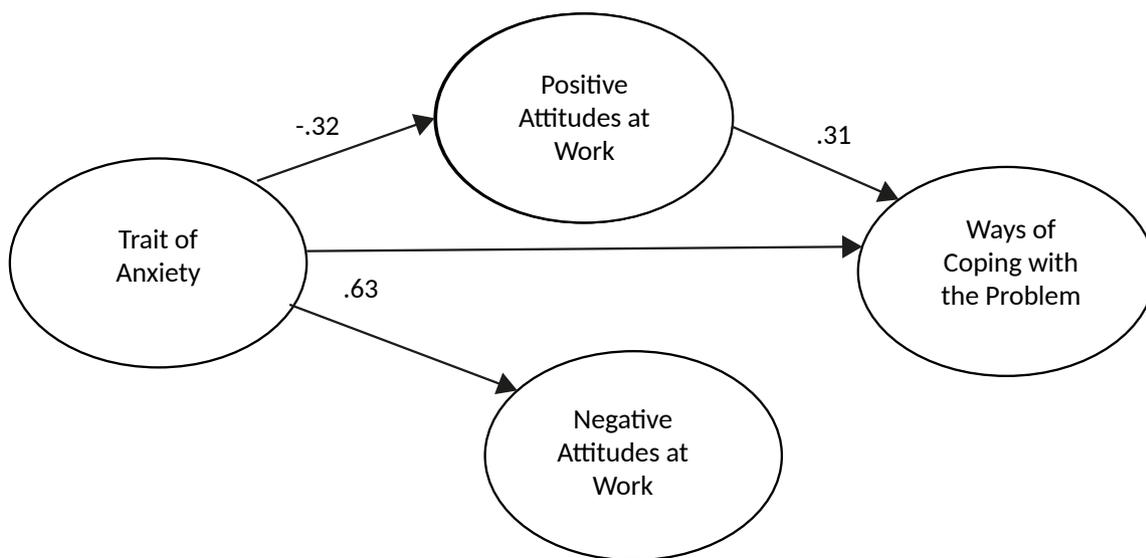
In the hypothesis test, first, the direct effect of the independent variable (anxiety) on the dependent variable (way of stress coping) without the mediating variables (general attitudes about work) was verified. The results indicated that anxiety negatively predicted

the way of stress coping with a focus on problems ( $\beta = -.67$ ;  $p < .001$ ), thus corroborating hypothesis 1.

In a second step, the mediating variable (positive attitudes about work) was inserted into the model. Regarding the direct effects, the data obtained showed that anxiety negatively predicted general positive attitudes about work ( $\beta = -.32$ ;  $p < .001$ ), and positively, general negative attitudes about work ( $\beta = .63$ ;  $p < .001$ ). In addition, there was a positive association between general positive attitudes about work and ways of stress coping ( $\beta = .31$ ;  $p < .001$ ), although general negative

attitudes about work were not associated with stress-coping strategies ( $\beta = .04$ ;  $p > .05$ ).

Regarding the indirect effects, a negative and significant effect was observed ( $\beta = -.10$ ;  $p < .001$ ). This result indicates that general positive attitudes about work partially mediated the relationship between anxiety and the ways of stress coping focused on problems. These findings, therefore, supported hypothesis 2. The final model presented adequate fit indexes:  $\chi^2 = 2188.25$  (1114), CFI = .86, TLI = .85, RMSEA = .05 (Figure 1).



**Figure 1.** Final Research Model.

Note: All values were significant ( $p < .001$ ).

## Discussion

Many studies have sought to understand the impacts of the new COVID-19 on different spheres of individuals' lives. However, the literature is still very incipient concerning Brazilian studies that address the mental health of workers, especially with regard to the effects of the pandemic on anxiety and stress-coping strategies. In order to contribute to the advancement of knowledge in this area, the present study tested a procedural model that evaluated the direct effects of anxiety on the stress coping strategies focused on the problem, in Brazilian workers during the COVID-19 pandemic, as well as the mediating role of general positive attitudes about work in such a relationship.

The results indicated that anxiety negatively predicted the ways of stress-coping focused on the problems, which fully supported hypothesis 1. During the

pandemic, individuals have experienced more feelings of anxiety due to the lack of correct information about the situation, financial losses and uncertainty about the disease and the future, among others (Brooks et al., 2020). In the specific case of workers, insecurity about labor relations, wages and fear of contagion, among other factors, are common. It would be expected, therefore, that anxiety generated by these situations would negatively predict their ways of coping with stress focused on problems, since such strategies represent adaptation plans aimed at reducing or eliminating such negative feelings (Lazarus & Folkman, 1984).

The results further pointed out that general positive attitudes at work partially mediated the relationship between anxiety and stress-coping strategies focused on problems. These findings therefore provide partial support for hypothesis 2 and corroborate the study by Wu et

al. (2009), according to which the psychological impact of stressful events related to an outbreak of an infectious disease can be mediated by people's perceptions.

Taken together, the findings now obtained also provide empirical support for the Theory of Conservation of Resources (Hobfoll, 1989), according to which individuals are led to protect their personal resources in stressful situations, being able to adopt, for this purpose, stress-coping strategies (Umucu & Lee, 2020). Applied to the work context, the current results showed that, in view of the pandemic situation of COVID 19, the anxiety it generated had negative effects on the general positive attitudes about work, which constitute a personal resource, which in turn led to the adoption of more stress-coping strategies focused on problems, as a way to reduce the stress caused by the pandemic.

## Conclusions

The results of the present investigation highlight the need for urgent development, planning and adoption of interventions aimed at avoiding the potentiation of mental health symptoms caused by the pandemic, as well as preparing workers to better cope with such situations. Therefore, it is imperative that workers can count on the specialized help of psychological intervention teams that enhance their positive attitudes about work and provide them with knowledge about different stress-coping strategies focused on the problems that they may use in reducing the stress and anxiety caused by the pandemic. In this way, several investigators have reiterated the importance of psychological interventions (Schmidt et al., 2020; Zhang, Wu, Zhao, & Zhang, 2020), such as, for example, the contributions of humanistic and cognitive approaches, as potential effective responses to the development of more adaptive responses to cope with stress symptoms that professionals have been presenting (Oliveira et al., 2020).

As for the limitations of the present study, it is worth mentioning, in the first place, the fact that self-report instruments were used, which can generate the common bias of the method. The fact that the collection was carried out online can also be seen as a limitation, because it can influence the response levels, which is why it would be interesting to use, in future investigations, face-to-face and qualitative data collections. Another limitation refers to the fact that although the sample was composed of all Brazilian regions'

individuals, it was mainly concentrated in three regions and States in Brazil, which restricts the possibilities of generalizing the current results. In addition, the sample mainly covered workers with formal employment relationships, whether in public or private institutions, which makes it difficult to generalize to other groups of workers, such as those who work informally.

It is also to be considered that the cross-sectional nature of the investigation makes it impossible to obtain causal inferences among the study variables. Future investigations can correct this limitation with the adoption of longitudinal designs, which allow obtaining a greater understanding about the relationships between the variables of the present study, with the monitoring, for example, of anxiety levels, attitudes about work and stress-coping strategies throughout the pandemic period.

Still with regard to future studies, it is suggested to carry out surveys aimed at analyzing the variables involved in the present investigation in specific work contexts (such as, for example, with professionals who work in essential activities in the pandemic situation). In addition, the testing of models that compare the effects of different personal antecedents (neuroticism, extroversion, kindness, conscientiousness, openness, optimism, empathy) on the dependent and mediator variables now tested, may also prove useful to deepen the understanding about the implications of COVID-19 on the attitudes and coping strategies of Brazilian workers in the framework of a pandemic situation. The importance of new studies seeking to understand the phenomena assessed in groups of workers in informal employment situations and with other employment contexts is also emphasized.

Different studies have shown that, in pandemic circumstances, significant changes in individuals' mental health levels usually occur. Thus, it is necessary to continuously evaluate Brazilian workers, in order to monitor their feelings, attitudes and behaviors in the framework of this atypical situation, as well as the analysis of their coping strategies to the challenges imposed by changes in their routines and work methodologies and the risks to which they may be exposed. Such findings could undoubtedly contribute to the development of intervention strategies and care policies geared to the Brazilian workers whose specific objective is their mental health improvement and well-being at work and in their life in general.

## References

- Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance, and normative commitment to the organization. *Journal of Occupational Psychology*, *63*, 1-18. doi: 10.1111/j.2044-8325.1990.tb00506.x
- Brooks, S., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G., J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet*, *395*(10227), 912-920. doi: 10.1016/S0140-6736(20)30460-8
- Brown, T. A. (2015). *Methodology in the social sciences. Confirmatory factor analysis for applied research* (2nd ed.). New York, NY: The Guilford Press.
- Byrne, B. M. (2001). *Multivariate applications book series. Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, New Jersey: Lawrence Erlbaum Associates Publishers.
- Carvalho, P. M. M., Moreira, M. M., Oliveira, M. N. A., Landim, J. M. M., & Neto, M. L. R. (2020). The psychiatric impact of the novel coronavirus outbreak. *Psychiatry Research*, *286*, 112902. doi: 10.1016/j.psychres.2020.112902
- Damásio, B. F., & Borsa, J. C. (Eds.). (2017). *Manual de desenvolvimento de instrumentos psicológicos*. São Paulo: Vetor.
- Eagly, A. H., & Chaiken, S. (1993). *The Psychology of attitudes*. Belmont, CA: Wadsworth.
- Ferguson, N., Laydon, D., Nedjati Gilani, G., Imai, N., Ainslie, K., Baguelin, M., ... Ghani, A. (2020). *Report 9: Impact of non-pharmaceutical interventions (NPIs) to reduce COVID19 mortality and healthcare demand*. doi: 10.25561/77482
- Fioravanti, A. C. M., Santos, L., Faria, S., Silvia, Cruz, A. P. M., & Landeira-Fernandez, J. (2006). Avaliação da estrutura fatorial da Escala de Ansiedade-Traço do IDATE. *Avaliação Psicológica*, *5*(2), 217-224. Retrieved from [http://pepsic.bvsalud.org/scielo.php?script=sci\\_arttext&pid=S1677-04712006000200011&lng=pt&tlng=pt](http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1677-04712006000200011&lng=pt&tlng=pt)
- Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior*, *21*(3), 219-239. doi: 10.2307/2136617
- Folkman, S., Lazarus, R. S., Gruen, R. J., & De Longis, A. (1986). Appraisal, coping, health status and psychological symptoms. *Journal of Personality and Social Psychology*, *50*(3), 571-579. doi: 10.1037//0022-3514.50.3.57
- Freitas, A. R. R., Napimoga, M., & Donalísio, M. R. (2020). Análise da gravidade da pandemia de Covid-19. *Epidemiologia e Serviços de Saúde*, *29*(2), e2020119. doi: 10.5123/s1679-49742020000200008
- Gil-Monte, P., & Peiró, J. M. (1997). *Desgaste psíquico en el trabajo: El síndrome de quemarse*. Madrid: Síntese.
- Gondim, S., & Borges, L. O. (2020). Significados e sentidos do trabalho do home-office: desafios para a regulação emocional. *Central de conteúdo COVID-19*. SBPOT. Retrieved from <https://www.sbpot.org.br/publicacoes/artigos>
- Hayes, A. F. (2013). *Methodology in the social sciences. Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, *44*(3), 513-524. doi: 10.1037/0003-066X.44.3.513
- Hobfoll, S. E., Johnson, R. J., Ennis, N., & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of Personality and Social Psychology*, *84*(3), 632-643. doi: 10.1037/0022-3514.84.3.632
- Horesh, D., & Brown, A. (2020). Traumatic stress in the age of COVID-19: A call to close critical gaps and adapt to new realities. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*(4), 331-335. doi: 10.1037/tra0000592
- Huremović, D. (2019). *Psychiatry of pandemics: A mental health response to infection outbreak*. Gewerbestrasse: Springer International Publishing. doi: 10.1007/978-3-030-15346-5
- Jeong, H., Yim, H. W., Song, Y-J., Moran, K., Min, J-A., Cho, J., & Chae, J-H. (2016). Mental health status of people isolated due to Middle East respiratory syndrome. *Epidemiology and Health*, *38*, e2016048. doi: 10.4178/epih.e2016048
- Judge, T. A., & Kammeyer-Mueller, J. D. (2012). Job attitudes. *Annual Review of Psychology*, *63*, 341-367. doi: 10.1146/annurev-psych-120710-100511
- Kinicki, A. J., McKee-Ryan, F. M., Schriesheim, C. A., & Carson, K. P. (2002). Assessing the construct validity of the job descriptive index: A review and meta-analysis. *Journal of Applied Psychology*, *87*, 14-32. doi: 10.1037//0021-9010.87.1.14
- Lai, J., Ma, S., Wang, Y., Cai, Z.; Hu, J.; Wei, N., ... Hu, S. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease. *JAMA Netw Open*, *3*(3), e203976. doi: 10.1001/jamanetworkopen.2020.3976
- Lazarus, R., & Folkman, S. (1984). *Stress appraisal and coping*. New York: Springer.
- Locke, E. A. (1969). What is job satisfaction? *Organizational Behaviour Human Performance*, *4*(4), 309-336. doi: 10.1016/0030-5073(69)90013-0
- Meyer, J. P., Stanley, D. J., Herscivitch, L., & Topolnysky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, *61*, 20-52. doi: 10.1006/jvbe.2001.1842
- Ministério da Saúde. (2020a). *O que é coronavírus? (COVID-19)*. Brasília, DF. Retrieved from <https://coronavirus.saude.gov.br/>
- Ministério da Saúde. (2020b). *Boletins epidemiológicos*. Brasília, DF. Retrieved from <https://coronavirus.saude.gov.br/boletins-epidemiologicos>
- Moya, M., Willis, G. B., Paez, D., Pérez, J. A., Gómez, Á., Sabucedo, J. M., ... Salanova, M. (2020). La Psicología Social ante el COVID19: Monográfico del International. *Journal of Social Psychology*. doi: 10.31234/osf.io/fdn32
- Oliveira, W. A., Oliveira-Cardoso, E. A., Silva, J. L., & Santos, M. A. (2020). Impactos psicológicos e ocupacionais das sucessivas ondas recentes de pandemias em profissionais da saúde: Revisão integrativa e lições aprendidas. *Estudos de Psicologia (Campinas)*, *37*, e200066. doi: 10.1590/1982-0275202037e200066
- Pérez-Nebra, A. R., Carlotto, M. S., & Sticca, M. G. (2020). Bem-estar e estresse ocupacional em contexto de distanciamento social. In F. Queiroga (Ed.), *Orientações para o home office durante a pandemia da COVID-19* (Vol. 1, pp. 31-38). Porto Alegre, RS: Associação Brasileira de Psicologia Organizacional e do

- Trabalho. Retrieved from <https://www.sbpot.org.br/publicacoes/livros/volume-1-orientacoes-para-o-home-office-durante-a-pandemia-da-covid-19/>
- Schmidt, B., Crepaldi, M. A., Bolze, S. D. A., Neiva-Silva, L., & Demenech, L. M. (2020). Saúde mental e intervenções psicológicas diante da pandemia do novo coronavírus (COVID-19). *Estudos de Psicologia Campinas*, 37, e200063. doi: 10.1590/1982-0275202037e200063
- Seidl, E. M. F., Trócoli, B. T., & Zannon, C. M. L. C. (2001). Análise fatorial de uma medida de estratégias de enfrentamento. *Psicologia: Teoria e Pesquisa*, 17(3), 225-234. doi: 10.1590/S0102-37722001000300004
- Talidong, K. J. B., & Toquero, C. M. D. (2020). Philippine teachers' practices to deal with anxiety amid COVID-19. *Journal of Loss and Trauma*, 25(6-7), 573-579. doi: 10.1080/15325024.2020.1759225
- Tamayo, M. R., Mendonça, H., & Silva, E. N. (2012). Relação entre estresse ocupacional, coping e burnout. In Ferreira, M. C. & Mendonça, H. (Eds.), *Saúde e bem-estar no trabalho, dimensões individuais e culturais* (pp. 35-61). São Paulo: Casa do Psicólogo
- Umucu, E., & Lee, B. (2020). Examining the impact of COVID-19 on stress and coping strategies in individuals with disabilities and chronic conditions. *Rehabilitation Psychology*, 65(3), 193-198. doi: 10.1037/rep0000328
- Wang, C., Pan, R., Wan, X., Tan Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in china. *International Journal of Environmental Research and Public Health*, 17(5), 1729. doi: 10.3390/ijerph17051729
- Wong, J., Goh, Q. Y., Tan, Z., Lie, S. A., Tay, Y. C., Ng, S. Y., & Soh, C. R. (2020). Preparing for a COVID-19 pandemic: A review of operating room outbreak response measures in a large tertiary hospital in Singapore. *Canadian Journal of Anesthesia*, 7(6), 732-745. doi: 10.1007/s12630-020-01620-9
- Wu, P., Fang, Y., Guan, Z., Fan, B., Kong, J., Yao, Z., ... Hoven, C. W. (2009). The psychological impact of the SARS epidemic on hospital employees in China: Exposure, risk perception, and altruistic acceptance of risk. *The Canadian Journal of Psychiatry*, 54(5), 302-311. doi: 10.1177/070674370905400504
- Xiao, C. (2020). A novel approach of consultation on 2019 novel coronavirus (COVID-19)-related psychological and mental problems: Structured letter therapy. *Psychiatry Investigation*, 17(2), 175-176. doi: 10.30773/pi.2020.0047
- Zhang, J., Wu, W., Zhao, X., & Zhang, W. (2020). Recommended psychological crisis intervention response to the 2019 novel coronavirus pneumonia outbreak in China: A model of West China Hospital. *Precision Clinical Medicine*, 3(1), 3-8. doi: 10.1093/pcmedi/pbaa006

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