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An Investigation on Employees' Methods of Coping with Stress in the COVID-19 Outbreak Process

COVID-19 Salgın Sürecinde Çalışanların Stresle Başa Çıkma Yöntemleri Üzerine Bir Araştırma

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Abstract: The uncertainty, change and concerns brought by the pandemic threaten the psychological wellbeing of employees and make them more prone to experience high levels of stress. Increased demands and decreased control and resources due to conditions entailed by the pandemic, elevate stress levels of employees. Investigation of the nature of the stress that employees face and its links with the possible ways that can be utilized for coping, become crucial for understanding and managing the negative psychological outcomes of the pandemic. Built on Demand–Control Model and Job Demands–Resources Theory, study investigates the stress levels, preferred forms of coping responses and their links with stress in this unique period. Additionally, study aims to describe what kind problems and stressors employees face during the pandemic and what forms of actions they take for coping with them. 146 employees working in various sectors (majority of them in the health care sector) consisted the sample of the study. The research tools are approved by Istinye University Social and Human Sciences Research Ethics Committee. Confirmatory factor analysis provided adequate fit indexes for the measures of the study. High reliabilities were calculated for the dimensions of the measures. Results of correlation and path analysis emphasized the mitigating effect of positive reappraisal on stress levels as it was demonstrating the highest correlation with stress and was the single significant predictor in the path analysis when all coping responses and control variables were taken together. However, the highest levels of coping responses used by employees were logical analysis and problem solving. Opinions and perceptions of employees about distance working and their concerns and coping methods regarding the changes the pandemic brought into their lives were addressed at the end of the study. Study provides useful information for institutions, organizations and policy makers to establish effective preventative and protective managerial practices to cope with the negative psychological consequences of the pandemic.

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Structured Abstract: Introduction: The COVID-19 pandemic has been drastically affecting the lives of individuals all over the world. Pandemic did not only bring worldwide macroeconomic problems that have never been seen before (Guerrieri et al., 2020; McKibbin & Fernando, 2020) but it also brought psychological hazards. Studies addressing earlier epidemics indicate highly critical psychological outcomes and COVID-19 pandemic has a far wider impact on society and individuals than the previous epidemics. The guide published by the World Health Organization (WHO, 2014) lists serious factors such as depression, emotional numbness, sleep disorders, eating disorders, loss of orientation or even loss of perception of reality among the psychological reactions that individuals can give against the epidemics. In addition to the direct effect of epidemics caused by the infection, indirect psychological effects cause long-lasting economic and social problems. In this unique process, economic problems and uncertainties about what awaits the world and humanity in general affect the psychology of individuals negatively. Moreover, people feeling threatened about losing their jobs, their lives and their loved ones become more vulnerable for experiencing high levels of stress.

According to Demand–Control Model (Karasek, 1979) employees feel higher levels of stress when the job demands are higher and they feel less in control. Accordingly, Job Demands–Resources Theory (Bakker & Demerouti, 2014) suggests that decreased resources (personal and job) and increased job demands are the formula for strain, exhaustion and even burnout. The current job demands are significantly increased for many professionals during the pandemic, especially for the ones who have high human interaction.

Purpose

Study aims to reveal the stress levels of employees, preferred forms of coping responses and their relationship with stress in this unique period. Additionally, through categorical questions, we aim to describe what kind problems and stressors employees face during the pandemic and what kind of actions do they take to cope with them. Their opinions and perceptions about distance working and changes the pandemic brought into their lives were also addressed.

Method

We used a convenience sampling approach and reached employees working in different sectors, however, respondents were dominantly employed in health care sector. Ethics committee approval was obtained from Istinye University Social and Human Sciences Research Ethics Committee with the meeting dated 05.06.2020, numbered 2020/7 and decision number 01. Results of difference test regarding sectors and occupations did not indicate any significant difference in any of the study variables so we kept all the data from various sectors for the further analysis. In order to assess the nature and levels of the methods respondents used for coping with stress, we utilized The Coping Responses Inventory (Moos, 1993, 1997). The original scale has two umbrella factors as avoiding strategies and approach strategies. Approach strategies part of the scale was translated and validated into Turkish by Ballı and Kılıç (2016). Stress levels of respondents were measured via Perceived Stress Scale developed by Cohen, Kamarck and Mermelstein (1983). The scale was validated for Turkish by Eskin et al. (2013). We asked one-item categorical questions to assess the demographic characteristics and pandemic related conditions (e.g. distance working) of respondents.

We used confirmatory factor analysis (CFA) in order to calculate the fit indexes of the scales using AMOS 25 statistical program. Results demonstrate that the fit scores indicate adequate to good fit in accordance with the limits of fit indexes provided by Hu and Bentler (1999).

Results and Discussion

Findings demonstrated significant relationships between coping responses and stress levels of employees. Polizzi, Lynn & Perry (2020)'s study, which is conducted during COVID-19 pandemic, supports the link between coping and distress levels. Results of the current study emphasize the mitigating effect of positive reappraisal on stress levels, as it demonstrated the highest correlation with stress and was the single significant predictor in the path analysis when all coping responses and control variables were taken together. However, the highest levels of coping responses used by employees were logical analysis and problem solving. Although findings of Billings & Moos (1984) emphasize the predictive power of problem solving as a significant determinant for dysfunctions, our findings did not support the same pattern of association. The nature of the conditions brought by the pandemic may put forward reappraisal instead of problem solving because the stressors entailed by the pandemic are less likely to be solved and more enabling for reappraisal.

Coping responses and stress levels demonstrated significant differences between genders. Female respondents experienced significantly higher levels of total stress and perceived distress and male respondents

used significantly higher levels of logical analysis. Findings regarding to gender differences are in accordance with the findings of Cronkite & Moos (1984). Distance working can also be a significant determinant, as employees working from home used lower levels of coping than the ones working in the workplace.

The most common stressors during the pandemic were regarding the family and loved ones rather than the self. Employees were highly concerned about carrying the virus to their families, losing their loved ones and being away from their families. More self-involving stressors such as getting the virus, fear of death or losing the job were listed after the aforementioned altruistic ones. This may be due to highly collectivistic codes and characteristics of Turkish culture (Hofstede, 1991).

Frequent problems regarding work life during the pandemic were listed as administrative issues, long working hours and deficiencies for protective equipment. 16% of the respondents indicated that the necessary precautions for the pandemic was not taken by their organization. Employees used indoor activities such as meditating, reading and exercising for coping the negative effects of the pandemic. Social distancing and engaging to the work were also popular coping responses.

Studies addressing the psychological consequences and the ways to cope with them provide significant information and suggestions to policy makers for enhancing effective preventative actions. Results of this study emphasize the importance of coping responses for alleviating the stress levels of employees. Interventions such as trainings or stress reduction and coping programs for strengthening coping mechanisms of employees can be useful for combating with the negative psychological outcomes of the pandemic.

Keywords: Industrial Psychology, COVID-19, Stress, Coping Responses, Distance Working, Health Care Professionals

Öz: Salgının getirdiği belirsizlik, değişim ve endişeler, çalışanların psikolojik refahını tehdit etmekte ve onları yüksek düzeyde stres yaşamaya daha yatkın hale getirmektedir. Salgının neden olduğu koşullar nedeniyle artan talepler ve kontrol ve kaynakların azalması çalışanların stres düzeylerini yükseltmektedir. Çalışanların karşılaştığı stresin doğasının ve başa çıkmada kullanılacak olası yollarla ilişkilerinin araştırılması, pandeminin olumsuz psikolojik sonuçlarını anlamak ve yönetmek için çok önemlidir. Talep-Kontrol Modeli ve Talep-Kaynak Teorisi üzerine inşa edilen çalışma, bu benzersiz dönemde çalışanların stres düzeylerini, tercih edilen başa çıkma biçimlerini ve stresle bağlantılarını araştırmaktadır. Ek olarak, çalışma, salgın sırasında çalışanların ne tür problemler ve stresörlerle karşı karşıya olduğunu ve onlarla başa çıkmak için ne tür önlemler aldıklarını ortaya koymayı amaçlamaktadır. Araştırma için İstinye Üniversitesi Sosyal ve Beşeri Bilimler Araştırmaları Etik Kurulunun 05.06.2020 tarihli 2020/7 numaralı toplantı ve 01 numaralı kararınca etik kurul onayı alınmıştır. Çalışmanın örneklemini çeşitli sektörlerde (çoğunluğu sağlık sektöründe) çalışan 146 kişi oluşturmaktadır. Doğrulayıcı faktör analizi, çalışmada kullanılan ölçekler için hesaplanan uyum indekslerinin yeterli olduğunu göstermiştir. Ölçeklerin alt boyutları için yüksek güvenilirlik skorları hesaplanmıştır. Çalışma, yol analizinde tüm başa çıkma yöntemleri ve kontrol değişkenleri birlikte alındığında, tek anlamlı belirleyici olduğu için ve stresle en yüksek korelasyonu gösterdiğinden dolayı, pozitif yeniden değerlendirilmenin stres seviyeleri üzerindeki etkisini vurgulamıştır. Bununla birlikte, çalışanlar tarafından kullanılan en yüksek başa çıkma tepkileri mantıksal analiz ve problem çözmedir. Çalışmanın sonunda çalışanların uzaktan çalışma konusundaki görüş ve algıları ile salgının yaşamlarına getirdiği değişikliklere ilişkin kaygıları ve başa çıkma yöntemleri ele alınmıştır. Çalışma, pandeminin olumsuz psikolojik sonuçlarıyla başa çıkmak için etkili önleyici ve koruyucu yönetim uygulamaları oluşturmak adına kurumlar, işletmeler ve politika yapıcılar için yararlı bilgiler sunmaktadır.

Anahtar Kelimeler: Endüstri Psikolojisi, COVID-19, Stres, Başa Çıkma Yöntemleri, Uzaktan Çalışma, Sağlık Çalışanları

Introduction

The COVID-19 pandemic has been drastically affecting the lives of individuals all over the world. According to World Health Organization data (WHO, 2020a), as of June 21st 2020, 8,708,008 confirmed cases and 461,715 COVID-19 related deaths were detected over the world. Pandemic did not only bring worldwide macroeconomic problems that have never been seen before (Guerrieri et

al., 2020; McKibbin & Fernando, 2020) but it also brought psychological hazards. Studies addressing earlier epidemics indicate highly critical psychological outcomes and COVID-19 pandemic has a far wider impact on society and individuals than the previous epidemics. The guide published by the World Health Organization (WHO, 2014) lists serious factors such as depression, emotional numbness, sleep disorders, eating disorders, loss of orientation or even loss of perception of reality among the psychological reactions that individuals can experience during the epidemics. In addition to the direct effects of epidemics caused by the infection, indirect psychological effects cause long-lasting economic and social problems. For instance, individual and social psychological responses increased mortality, due to reasons other than virus, in the Ebola virus process (Shultz et al. 2016). Recent studies addressing psychological consequences of the COVID-19 pandemic indicate even higher levels of severity for the problem (Holmes et al., 2020; Li et al., 2020; Pfefferbaum & North, 2020) that can even cause suicide cases based on COVID-19 fear (Mamun & Griffiths, 2020). Findings of the studies conducted in Turkey accordingly emphasize the severity of negative psychological consequences of the pandemic (Çiçek & Almalı, 2020; Akat & Karataş, 2020; Çölgeçen & Çölgeçen, 2020).

In this unique process, economic problems and uncertainties about what awaits the world and humanity in general, affect the psychology of individuals negatively. Moreover, people feeling threatened about losing their jobs, their lives and their loved ones become more vulnerable for experiencing high levels of stress. Stress, by definition, is about the level of uncertainty and the asymmetry between the demands of the life and the perceived resources that can be supplied to cope with them (Lazarus, 1966; Lazarus & Folkman, 1984). Negative conditions brought by the pandemic increase uncertainty and demands in every life domain and create important effects on work outcomes. Radical changes in the methods of working, increasing demands to adapt them rapidly and the uncertainties in many aspects of work life, added to all aforementioned general concerns, make it inevitable for employees to face high levels of stress. Briefly, this study attempts to investigate the nature and the levels of the stress employees experience during the epidemic and the ways they use to cope with it. We propose significant differences between demographic groups and different work styles (e.g. distance working) and significant relationships among stress levels and the coping responses.

Theoretical foundation for the propositions of this study can be found in Demand–Control Model and Job Demands–Resources Theory. According to Demand–Control Model (Karasek, 1979) employees feel higher levels of stress when the job demands are higher and they feel less in control. Accordingly, Job Demands–Resources Theory (Bakker & Demerouti, 2014) suggests that decreased resources (personal and job) and increased job demands are the formula for strain, exhaustion and even burnout. The current job demands are significantly increased for many professionals during the pandemic, especially for the ones who have high human interaction. In the fight against the pandemic, healthcare professionals are at the forefront and are therefore at highest risk of being infected. In addition to exposure to the pathogen, the stressors include long working hours, psychological strain, extreme fatigue, professional exhaustion, stigma and physical and psychological violence (WHO, 2020b). For most of the employees cleaning the self and surroundings frequently, wearing masks and other equipment, being alert for keeping social distance and disinfecting all the clothes and self for keeping the people at home safe, adds up to existing work demands. Radical changes in the ways of working (e.g. distance working) also require employees to learn and get used to new methods and computer programs. For instance, during this process, academicians and teachers had to adapt to distance learning systems promptly in a short notice. Although most of the universities supported their academicians with online trainings about using and adapting to distance-learning systems, transforming the course materials and evaluation methods to online education added significant amount of work strain for many academicians. Many people, especially health care professionals, preferred to live away from their families or lower their interaction with them in order to keep them safe. This also reduce the support employees get from their families and decrease the supply side for

answering aforementioned increased demands. As the gap between the demands and supply increased, the levels of stress employees experience ascended.

Coping becomes crucial to address the elevated levels of stress that employees face during this demanding process. Coping can be defined as "cognitive and behavioral efforts to manage external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus and Folkman, 1984: 141). Individuals can create various coping responses against stress. Early classifications of coping methods concentrate on whether individuals choose to address the stressors via an active vs. passive (avoidant) (Carver, Scheier & Weintraub, 1989); or a problem focused vs. emotion-focused approach (Billings & Moos, 1981; Lazarus and Folkman, 1984). Active methods include facing the situation and taking charge against the stressors while passive methods refer to create ways to avoid or respite the problems. Emotion focused approach is about modifying and easing the emotional outcomes of the stressors while problem focused refers to taking action on the problem itself.

Logical analysis and positive reappraisal can be considered under 'cognitive approach' type of coping response (Moos & Holahan, 2003). Logical analysis refers to digging into pieces of the problem and framing the possible causes and consequences of it to reach a realistic cognitive state about the situation. Positive reappraisal is about reframing, reconsidering and cognitively reconstructing the situation in a more hopeful and optimistic manner for creating a more favorable mental picture of the situation (Moos & Holahan, 2003:1391). The method of behavioral approach includes 'problem solving', where individuals actively address the problem and 'seeking support' where individuals benefit the guidance and help of others (Moos, 1993).

Although there are valuable attempts to investigate the possible stressors (Gamsız, Yazıcı & Altun, 2013) and coping mechanisms to address them (e.g. Receptoğlu & Receptoğlu 2018; Vatansever Bayraktar & Yilmaz 2016) in Turkish context; the uniqueness of the current circumstances necessitates new studies specifically designed for understanding how these concepts and links among them form during the pandemic. Studies investigating the coping strategies (e.g. Huang & Rong Liu; 2020; Gerhold, 2020) during COVID-19 Pandemic mostly conducted in other countries and Turkey is in the cluster that experiences the highest levels of stress due to pandemic among 27 countries (Kowal et. al., 2020).

Investigating the nature, levels, antecedents and consequences of the stress employees experience and possible ways to cope with it become extremely important for academically exploring the links between variables in this unique process. These attempts are also valuable in terms of the information that they will provide for policy makers and practitioners to manage the process effectively. The pandemic entails unique circumstances that employees had never experienced before in their lifetime. This nature of the situation forms the current study inevitably exploratory and descriptive in nature. Thus, although we propose that the coping responses will be significantly related to stress levels of employees and demographic variables will create significant differences among these variables; more importantly, we aim to reveal the stress levels of employees, preferred forms of coping responses and how they relate to stress in this unique period. Additionally, through one item categorical questions, we aim to describe what kind problems and stressors employees face during the pandemic and what kind of actions they take to cope with them. Their opinions and perceptions about distance working and changes the pandemic brought into their lives were also addressed. For aforementioned pattern of given circumstances and study aims, we chose to create research questions instead of producing hypotheses. We aim to address the following research questions:

1. What levels of stress do employees face during the pandemic?
 - 1a: Do the stress levels they experience differ in accordance to demographical (gender, marital status, age etc.) and categorical (e.g. working from distance) variables?

2. What kind of coping responses do employees use?
 - 2a: Do these coping methods change due to demographics and categorical differences?
 - 2b: Which of these responses works best for diminishing stress levels?
3. What kind of problems and stressors do employees face during the pandemic?
 - 3a: What kind of actions do they take for coping with them?
4. What kind of advantages and disadvantages of distance working do employees experience during the pandemic?

Aiming to address all these research questions, study can be considered as two completing parts, one investigating the relationships among study variables via original measures and correlation, difference and path analyses and the other one depicting the nature and levels of stressors and the ways employees choose to address them in a descriptive way. Enhancing our knowledge on aforementioned research questions, study aims to provide information for supporting further research on this matter and contribute to our ability to produce effective solutions by increasing our knowledge on the psychological effects of the process.

Materials and Methods

Sample

We used a convenience sampling approach and reached employees working in different sectors, however respondents were dominantly employed in health care sector. Results of difference test regarding sectors and occupations did not indicate any significant difference in any of the study variables so we kept all the data from various sectors for the further analysis. 66% of the 146 respondents were working in the health care sector. 15% were employed in educational institutions. 5% were employed in food sector and rest were working in various sectors (e.g. banking, logistics, transportation). 44% of the respondents were between ages 31-40; 25% were 41-50, 24% were 20-30 and 7% were 51 and older. 71% of the participants were female. 61% were married and half of them (approximately) had children. 90% of the participants were university graduates. 60% of the participants were working in public sector.

Measures

Ethics committee approval was obtained from Istinye University Social and Human Sciences Research Ethics Committee with the meeting dated 05.06.2020, numbered 2020/7 and decision number 01. In order to assess the nature and levels of the methods respondents used for coping with stress, we utilized The Coping Responses Inventory that is developed by Moos (1993, 1997). The original scale has two umbrella factors as avoiding strategies and approach strategies. Approach strategies part of the scale was translated and validated into Turkish by Ballı ve Kılıç (2016). Authors provided evidence for high reliabilities for the scale and its sub dimensions: problem solving (0.91), positive reappraisal (0.91), logical analysis (0.91) and seeking support (0.80).

Stress levels of respondents were measured via 10 items version of the Perceived Stress Scale developed by Cohen, Kamarck and Mermelstein (1983). The scale was validated for Turkish by Eskin et al. (2013) and high internal consistency (0.82) and test re-test reliabilities (0.88) were calculated for the scale. Scale has two sub-dimensions: perceived insufficient self-efficacy and perceived distress.

We asked one-item categorical questions to assess the demographic characteristics and pandemic related conditions (e.g. distance working) of respondents.

Measurement Model

The measures we used in this study are original forms that are frequently used in literature by numerous studies. Thus, we used confirmatory factor analysis (CFA) in order to calculate the fit

indexes of the scales using AMOS 25 statistical program. Results demonstrate that the fit scores we calculated (Table 1) indicate adequate to good fit in accordance with the limits of fit indexes provided by Hu and Bentler (1999).

Table 1: Fit indexes for the scales used in the study

	χ^2/df	CFI	IFI	TLI	GFI	RMSEA
1. Perceived Stress Scale	1.62	0.91	0.91	0.89	0.86	0.07
2. Coping Responses Inv.	2.30	0.96	0.96	0.93	0.94	0.09

Findings

Reliabilities for the measures (calculated via SPSS) indicates high reliabilities for the factors of the scales. Reliability scores for the dimensions of coping scale were 0.81 for problem solving, 0.79 for positive reappraisal, 0.75 for logical analysis and 0.72 for seeking support (table 2). Reliability scores for the dimensions of perceived stress scale were 0.85 for insufficient self-efficacy and 0.75 for perceived distress (Table 2).

Table 2: Means, standard deviations, and reliability scores for the study variables

	Min	Max	M	SD	α
1. Total Perceived Stress	1.47	5.00	3.07	.721	0.83
2. Perceived Distress	1.60	5.00	3.54	.924	0.75
3. Insufficient Self-efficacy	1.00	5.00	2.60	.815	0.85
4. Total Coping	2.18	5.00	3.89	.527	0.87
5. Logical Analysis	2.00	5.00	4.23	.533	0.75
6. Positive Reappraisal	1.80	5.00	3.94	.701	0.79
7. Seeking Support	1.00	5.00	3.24	.886	0.72
8. Problem Solving	2.00	5.00	4.15	.610	0.81

Mean scores for stress scale indicate that employees face considerable levels of distress (3.54) with a minimum of 1.6 and maximum of 5.0. Insufficient self-efficacy dimension demonstrates relatively lower scores. We do not have data to compare these levels with the time before pandemic; still, comparing to other studies using the same scale (e.g. Eskin et al., 2013; Burger & Samuel, 2017) we may indicate that these scores are considerably higher. Among coping responses, employees use logical analysis at the highest (4.23) followed by problem solving (4.15) and positive reappraisal (3.94).

Correlation Analysis

All sub-dimension of coping responses, except seeking support, were negatively and significantly correlated with total perceived stress levels of respondents. Positive Reappraisal demonstrated the highest correlation coefficient with perceived total stress ($r=-.399$) and its sub dimensions (-.274 for perceived distress; -.395 for insufficient self-efficacy).

Gender showed significant correlations with total stress and perceived distress. Female respondents had higher stress levels. Male respondents indicated higher levels for logical analysis. Higher educational levels and being married were related to higher levels for logical analysis. Respondents who were working from distance had lower levels of positive reappraisal. Having COVID-19 positive cases in relatives was not significantly related with any of the study variables. These relations were further analyzed for whether they cause significant difference for the variables using difference tests.

Table 3: Correlations among Study Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	
1. T. Per. Stress	1												
2. Per. Distress	.851**	1											
3. In. Self-efficacy	.804**	.372**	1										
4. Coping	-.286**	-.147	-.339**	1									
5. Logical analysis	-.195*	-.112	-.217**	.699**	1								
6. P. Reappraisal	-.399**	-.274**	-.395**	.758**	.386**	1							
7. Seeking Support	-.045	.054	-.141	.790**	.382**	.388**	1						
8. Problem Sol.	-.295**	-.175*	-.324**	.826**	.541**	.572**	.500**	1					
9. Gender	-.183*	-.178*	-.122	.129	.240**	.121	-.015	.119	1				
10. Education	.105	.063	.115	.046	.198*	-.064	-.018	.084	.018	1			
11. Marital St.	.034	.007	.051	-.125	-.223**	.064	-.136	-.113	-.086	.035	1		
12. Children	-.016	-.028	.003	-.065	-.100	.078	-.113	-.063	-.057	.012	.654**	1	
13. Dist. Working	-.114	-.147	-.035	.109	.000	.165*	.070	.084	.047	.013	.236**	.129	1
14.COVID (Relat)	-.018	-.036	.008	.048	.008	.062	-.007	.096	.118	.036	.015	.009	-.028

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

We conducted a series of difference tests using One Way Anova and Independent Samples T-Test. Significant differences are given in table 4. Male respondents used significantly higher levels of logical analysis. Female respondents experienced significantly higher levels of total stress and perceived distress. Distance working and logical analysis were significantly higher in single participants. Employees working from home used lower levels of coping than the ones working in the workplace.

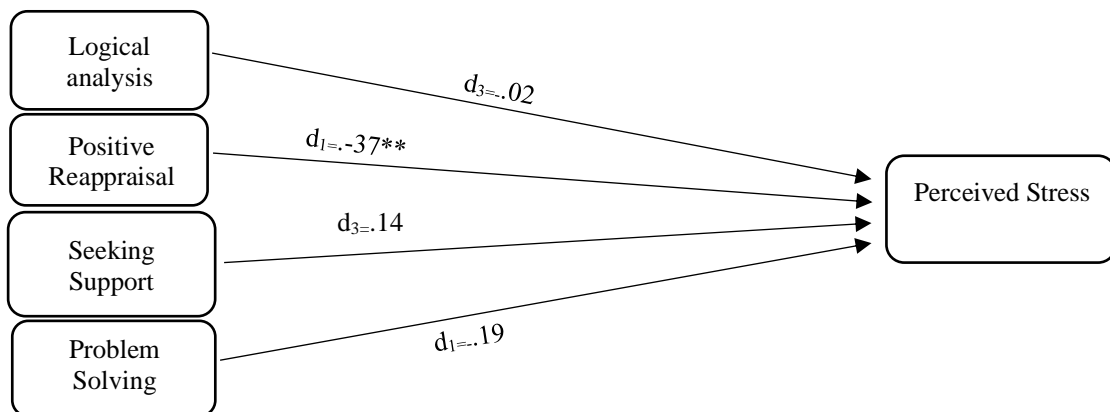
Table 4: Results of Difference Tests

		N	Mean	Stan D.	T	Sig.
Logical Analysis	Female	103	4.1505	.54857	-3.234	.002
	Male	43	4.4302	.44280		
Perceived Distress	Female	103	3.6485	.92819	2.226	.000
	Male	43	3.2884	.87538		
Total Stress	Female	103	3.1576	.78328	2.233	.027
	Male	43	2.8690	.49726		
Logical Analysis	Married	89	4.3277	.48750	2.648	.009
	Single	57	4.0848	.57228		
Distance Working	Married	89	1.42	.704	-2.910	.004
	Single	57	1.81	.915		
Coping	Distance Working	93	3.8300	.52284	-1.985	.049
	Workplace Working	53	4.0084	.52115		

Path Analysis

We used structural equation modelling (SEM) for testing the direct effects of coping responses on perceived stress levels. Controlling for categorical variables, when all coping responses were taken together in the model, results of the path analysis provided evidence for the significant effects of positive reappraisal (point estimate = -.367, $p < 0.01$) on perceived stress.

Fig. 1. Results of Path Analysis



**p < .01. (2-tailed)

With this pattern of findings, first two research questions were addressed. Descriptives for the stress and coping levels of employees depicted that employees face high levels of stress and use logical analysis at the highest level followed by problem solving and positive reappraisal. There are

significant differences between genders regarding stress and coping levels as female respondents experienced significantly higher levels of total stress and perceived distress and as male respondents used significantly higher levels of logical analysis. Employees working from home used lower levels of coping than the ones working in the workplace.

Regarding the relationships between coping responses and stress levels, all sub-dimension of coping responses, except seeking support, were negatively and significantly correlated with total perceived stress levels of respondents. Positive Reappraisal demonstrated the highest correlation coefficient with perceived total stress and its sub dimensions. Results of path analysis indicated significant mitigating effect of positive reappraisal on stress levels.

For investigating the last two research questions of the study, we analyzed the responses for categorical and open-ended questions regarding the major stressors and problems participants face and the methods they use for coping with them and their opinions about the process.

Findings Regarding the Categorical Questions of the Study

We asked categorical questions to address last two research questions of the study. Respondents were allowed to choose more than one option and create their own answers as in open-ended questions. As we see in the Table 5, the highest concerns and stressors regarding COVID-19 pandemic were the fear for transmitting the infection to the participants' families and love ones (86%); fear of losing loved ones (53%), being away from families (47%) and fear of getting infected (42%). Other answers were fear of death (19%) and fear of losing their jobs (14%) (Table 5).

Table 5: What are your concerns and stress factors related to Covid-19 outbreak process?

	N	%
COVID-19 transmission to my family / loved ones	126	86
Fear of losing my loved ones.	77	53
Being away from my family	68	47
Fear of me getting COVID-19	62	42
Fear of death	28	19
Fear of losing my job	21	14
Other	5	3

We asked the problems participants face regarding their jobs during pandemic. 43% of the participants stated they faced no problems. Administrative issues (39%) length of working hours (27%), equipment deficiency (18%), lack of precautions regarding COVID-19 (16%) and insufficient working equipment (7%) were listed as problems regarding work. %5 of the answers was selected as 'Other' which included issues such as salary cuts and motivation problems (Table 6).

Table 6: What are the problems you have with your work life during COVID-19 process?

	N	%
I do not have any problem	63	43
Administrative issues	57	39
Length of working hours	39	27
COVID-19 protective equipment deficiency	26	18
The necessary precautions for COVID-19 are not taken.	24	16
Insufficient equipment (computer internet, etc.) required by my job.	10	7
Other	8	5

When we asked the methods for dealing with the negative effects of COVID-19 process, the most frequently selected answers were meditating (%80) and following the isolation rules (%78), followed by concentrating on their businesses (%38). Reading (%31), exercising (%10) and attending the online courses for hobbies (%4) were other ways respondents used for coping with stress (Table7).

Table 7: How do you deal with the negative effects of the COVID-19 outbreak process?

	F	%
Meditating	117	80
I am following the isolation rules.	114	78
I am concentrating on my business	55	38
I am reading	45	31
I am following the hygiene rules	27	18
I am exercising	14	10
I am attending online courses for my hobbies	6	4

%20 of the participants stated that they work from home due to measures against the COVID-19 outbreak, %64 do not work from home, and %16 work from home or in office periodically. 92% of the participants who had to work from home within the scope of the COVID-19 outbreak measures stated that their technological equipment and technological knowledge were sufficient to work from home and 8% stated that they were insufficient. 77% of the participants stated that they received enough support from their institutions to adapt home office working order.

We asked employees' opinions on the advantages of distance working and 64% of the respondent stated the advantage regarding its time saving nature. Given that many employees travel long distances for work, distance working may save significant time. 60% of the employees stated that they could better align their biological time with the requirements of the work. Silent work environment and focusing on business that especially need quieter environment are other popular answers. 13% of the respondents stated that there was no advantage of working from home (Table 8).

Table 8: Advantages of home office working order

	N	%
No time loss on road	34	64
Flexible working hours for my biological clock	32	60
No noise as in the office environment	25	47
To be able to focus on the works that need attention in a quieter environment	24	45
No unnecessary business divisions as in the office environment	24	45
There is no advantage	7	13

When asked for the disadvantages of working from home the highest selected answer was lack of socializing (60%). 'Communication barriers', 'difficulties for time management' and 'communication difficulties on reaching to managers' were the other highly selected answers respectively (Table 9).

Table 9: Disadvantages of home office working order

	N	%
Lack of socializing	32	60
Communication barriers	20	38
Difficulties for time management	14	26
Difficulty in communicating with managers	13	25
There are no disadvantages	10	19

66% of the participants are health care employees and 65% of these participants had frequent contact with COVID-19 patients, and 23% had no contact. When asked whether health care professionals considered changing their profession after the COVID-19 outbreak, 16% stated that they were thinking of changing their professions. 27% of the health care professionals stated that they would consider changing where they live after Covid-19. 82% of health care professionals stated that the necessary protective measures were taken by the institutions they work for. Only 5% of respondents stated that they receive psychological support during COVID-19 pandemic (Table 10).

Table 10: Health workers and Covid-19

	Yes	No
Do you plan to change your profession after the COVID-19 outbreak?	% 16	% 84
Do you plan to change the city you live in after the COVID-19 outbreak?	% 27	% 73
Do you think that protective measures have been taken by the institution you work with?	% 82	% 18
Did you get psychological support during this process?	% 5	% 95
Do you live alone?	% 9	% 91

Discussion

Built on Demand–Control Model (Karasek, 1979) and Job Demands–Resources Theory (Bakker & Demerouti, 2014), study propose elevated levels of stress due to decreased levels of perceived control and resources to cope with increased demands given the conditions brought by the pandemic. The feelings of being in control and sufficient for the demands of life diminish with the uncertainties and excessive demands entailed by the pandemic. Employees become prone to face high levels of stress and stress is a significant antecedent for many severe negative outcomes (House, 1974; Motowidlo et al., 1986; Lloyd King & Chenoweth, 2002). Investigation of the nature of stress that employees face and its links with the possible ways that can be utilized for coping, become very important for understanding and managing the negative psychological outcomes of the pandemic. Study contributes to literature by revealing the levels of stress and coping responses and the associations among them in this unique and dynamic process. Another contribution of the study is depicting the opinions and perceptions of employees regarding distance working, stressors and coping methods. Last, study provides valuable information for institutions, organizations and policy makers to establish effective preventative and protective managerial practices.

Unique circumstances of this process make the studies investigating the psychological outcomes regarding pandemic somehow exploratory in nature. Research questions regarding the stress levels of employees and the coping mechanisms that can deal with the stress become more

critical. This necessitates investigations addressing such problems to adopt research designs that employ both cause and effects relationships and descriptive and exploratory questions. In order to address the research questions of the current study, we integrated two research designs where we first analyzed the relationships between stress and coping responses, assessed by original well-structured scales and using correlation and path analysis; and second, we analyzed the responses of participants to open ended and categorical questions regarding their opinions and perceptions about the process.

Findings demonstrated significant relationships between coping responses and stress levels of employees. Polizzi, Lynn & Perry (2020)'s study conducted during COVID-19 pandemic support the link between coping and distress levels. Results of the current study emphasize the diminishing effect of positive reappraisal on stress. However, the highest levels of coping responses used by employees were logical analysis and problem solving. Although findings of Billings & Moos (1984) emphasize the predictive power of problem solving as a significant determinant for dysfunctions, our findings did not support the same pattern of association. The nature of the conditions brought by the pandemic may put forward reappraisal instead of problem solving because the stressors entailed are less likely to be solved and more enabling for reappraisal.

Coping responses and stress levels demonstrated significant differences between genders. Female respondents experienced significantly higher levels of total stress and perceived distress and male respondents used significantly higher levels of logical analysis. Findings regarding to gender differences are in accordance with the findings of Cronkite & Moos (1984). Distance working can also be a significant determinant as employees working from home used lower levels of coping than the ones working in the workplace.

The most common stressors during the pandemic were regarding the family and loved ones rather than the self. Employees were highly concerned about carrying the virus to their families, losing their loved ones and being away from their families. More self-involving stressors such as getting the virus, fear of death or losing the job were listed after these altruistic ones. This may be due to highly collectivistic codes and characteristics of Turkish culture (Hofstede, 1991).

Frequent problems regarding work life during the pandemic were listed as administrative issues, long working hours and deficiencies for protective equipment. A considerable number of (16%) of the respondents indicated that the necessary precautions for the pandemic was not taken by their organization. Employees used indoor activities such as meditating, reading and exercising for coping the negative effects of the pandemic. Social distancing and engaging to the work were also popular coping responses.

Majority of the respondents continue to work at their workplaces. This is normal considering the sample structure as the 2/3 of the respondents were healthcare professionals. Given that many employees travel long distances for work in İstanbul, employees stated that distance working saved significant amount of time. They also listed 'aligning their biological time with the requirements of the work' and 'being able to concentrate better on their work with no disruptions'. Although employees provided advantages for distance working, it did not create any significant difference for their stress and coping levels. This may be due to the disadvantages that distance working embodies. Decreased levels of socializing, ineffective communication and hardness of time management were listed by many of the respondents as the disadvantages of working from home.

Number of healthcare professionals considered to change the city they live was higher than the ones that considered changing their profession. Still 16% is an important proportion that policy makers should be concerned on increasing the occupational commitment levels of healthcare professionals. Another important matter here to manage will be the increased levels of demand for appointments to smaller cities. This pattern of findings are compatible with the results of Cai et al., (2020)'s study that is conducted on healthcare professionals in China during the pandemic.

Studies addressing the psychological consequences and the ways to cope with them provide significant information and suggestions to policy makers for enabling preventative actions. Results of this study emphasize the importance of coping responses for alleviating the stress levels of employees. Interventions such as training or stress reduction and coping programs for enhancing coping mechanisms of employees can be useful for combating with the negative psychological outcomes of the pandemic. One example evidence for the success of such programs is provided by Gül & Delice (2011). They indicate coping with stress also affects the relationship between married couples. Considering the increased importance of family in difficult times such as pandemics, these programs can provide utility for various domains of life to cope with negative effects of the process.

References

- Akat, M. & Karataş, K. (2020). Psychological effects of COVID-19 Pandemic on society and its reflections on education. *Turkish Studies*, 15(4), 1-13. <https://dx.doi.org/10.7827/TurkishStudies.44336>
- Bakker, A. B., & Demerouti, E. (2014). Job demands–resources theory. *Wellbeing: A complete reference guide*, 1-28.
- Ballı, A. İ. K., & Kılıç, K. C. (2016). Stresle Başa Çıkma Yöntemleri Ölçeğinin Türkçe'ye Uyarlanması: Geçerlilik ve Güvenirlik Çalışması. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 25(3), 273-286.
- Billings, A. G., & Moos, R. H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of behavioral medicine*, 4(2), 139-157.
- Billings, A. G., & Moos, R. H. (1984). Coping, stress, and social resources among adults with unipolar depression. *Journal of Personality and Social Psychology*, 46(4), 877–891. <https://doi.org/10.1037/0022-3514.46.4.877>
- Cai, H., Tu, B., Ma, J., Chen, L., Fu, L., Jiang, Y., & Zhuang, Q. (2020). Psychological Impact and Coping Strategies of Frontline Medical Staff in Hunan Between January and March 2020 During the Outbreak of Coronavirus Disease 2019 (COVID-19) in Hubei, China. *Medical science monitor: international medical journal of experimental and clinical research*, 26, e924171-1–e924171-16.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: a theoretically based approach. *Journal of personality and social psychology*, 56(2), 267–283.
- Cohen, S., Kamarck, T., Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24: 385-396.
- Cronkite, R. C., & Moos, R. H. (1984). The role of predisposing and moderating factors in the stress-illness relationship. *Journal of health and social behavior*, 372-393.
- Çiçek, B. & Almalı, V. (2020). COVID-19 pandemisi sürecinde kaygı öz-yeterlilik ve psikolojik iyi oluş arasındaki ilişki: özel sektör ve kamu çalışanları karşılaştırması. *Turkish Studies*, 15(4), 241-260. <https://dx.doi.org/10.7827/TurkishStudies.43492>
- Çölgeçen, Y. & Çölgeçen, H. (2020). Covid-19 pandemisine bağlı yaşanan kaygı düzeylerinin değerlendirilmesi: Türkiye örneği. *Turkish Studies*, 15(4), 261-275. <https://dx.doi.org/10.7827/TurkishStudies.44399>
- Eskin, M., Harlak, H., Demirkıran, F., & Dereboy, Ç. (2013, October). Algılanan stres ölçeğinin Türkçeye uyarlanması: güvenilirlik ve geçerlik analizi. *In New/Yeni Symposium Journal*, 51(3), 132-140.

- Gamsız, Ş., Yazıcı, H., & Altun, F. (2013). Öğretmenlerde A Tipi Kişilik, Stres Kaynakları, Öz Yeterlik ve İş Doyumu. *Electronic Turkish Studies*, 8(8), 1475-1488.
- Gerhold, L. (2020). COVID-19: Risk perception and Coping strategies. Freie Universität Berlin
- Guerrieri, V., Lorenzoni, G., Straub, L., & Werning, I. (2020). *Macroeconomic Implications of COVID-19: Can Negative Supply Shocks Cause Demand Shortages?* (No. w26918). National Bureau of Economic Research.
- Gül, Z., & Delice, M. (2011). Police Job Stress and Stress Reduction/Coping Programs: The Effects on The Relationship With Spouses. *Turkish Journal of Police Studies/Polis Bilimleri Dergisi*, 13(3), 19-38.
- Hofstede, G. (1991). *Organizations and cultures: Software of the mind*. McGrawHill, New York.
- Holmes, E. A., O'Connor, R. C., Perry, V. H., Tracey, I., Wessely, S., Arseneault, L., ... & Ford, T. (2020). Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *The Lancet Psychiatry*, 7(6), 547-560.
- House, J. S. (1974). Occupational stress and coronary heart disease: A review and theoretical integration. *Journal of health and social behavior*, 12-27.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*, 6(1), 1-55.
- Huang, L., & Rong Liu, H. (2020). Emotional responses and coping strategies of nurses and nursing college students during COVID-19 outbreak. *MedRxiv*. 1-17.
- Karasek Jr, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative science quarterly*, 285-308.
- Kowal, M., Coll-Martin, T., Ikizer, G., Rasmussen, J., Eichel, K., Studzinska, A., ... & Lieberoth, A. (2020). Who Is the Most Stressed During COVID-19 Isolation? Data from 27 Countries.
- Lazarus, R. S. (1966). *Psychological stress and the coping process*.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.
- Li, S., Wang, Y., Xue, J., Zhao, N., & Zhu, T. (2020). The impact of COVID-19 epidemic declaration on psychological consequences: a study on active Weibo users. *International journal of environmental research and public health*, 17(6), 2032.
- Lloyd, C., King, R., & Chenoweth, L. (2002). Social work, stress and burnout: A review. *Journal of mental health*, 11(3), 255-265.
- Mamun, M. A., & Griffiths, M. D. (2020). First COVID-19 suicide case in Bangladesh due to fear of COVID-19 and xenophobia: possible suicide prevention strategies. *Asian journal of psychiatry*, 51, 102073.
- McKibbin, W. J., & Fernando, R. (2020). The global macroeconomic impacts of COVID-19: Seven scenarios. 1-43.
- Moos, R. (1993). *Coping responses inventory: Professional manual (2nd ed.)*. New York: PAR Assessment Resources.
- Moos, R. H. (1997). *Coping Responses Inventory: A measure of approach and avoidance coping skills*. In C. P. Zalaquett & R. J. Wood (Eds.), *Evaluating stress: A book of resources* (p. 51–65). Scarecrow Education.

- Moos, R. H., & Holahan, C. J. (2003). Dispositional and contextual perspectives on coping: Toward an integrative framework. *Journal of clinical psychology*, 59(12), 1387-1403.
- Motowidlo, S. J., Packard, J. S., & Manning, M. R. (1986). Occupational stress: its causes and consequences for job performance. *Journal of applied psychology*, 71(4), 618-629.
- Pfefferbaum, B., & North, C. S. (2020). Mental health and the Covid-19 pandemic. *New England Journal of Medicine*, 383:510-512 DOI: 10.1056/NEJMp2008017
- Polizzi, C., Lynn, S. J., & Perry, A. (2020). Stress And Coping In The Time Of Covid-19: Pathways To Resilience And Recovery. *Clinical Neuropsychiatry*, 17(2), 59-62.
- Recepoğlu, E., & Recepoğlu, S. (2018). Ortaöğretim Öğrencilerinin Mizah Tarzlari İle Stresle Başa Çıkma Tarzlari Arasındaki İlişkinin İncelenmesi. *Electronic Turkish Studies*, 13(27), 1247-1264.
- Shultz, J. M., Cooper, J. L., Baingana, F., Oquendo, M. A., Espinel, Z., Althouse, B. M., ... & Mazurik, L. (2016). The role of fear-related behaviors in the 2013–2016 West Africa Ebola virus disease outbreak. *Current psychiatry reports*, 18(11), 1-14. <https://doi.org/10.1007/s11920-016-0741-y>
- Vatansever Bayraktar, H., & Yılmaz, K. Ö. (2016). Sınıf Öğretmenlerinin Çatışma Çözme Becerileri ile Stresle Başa Çıkma Becerileri Arasındaki İlişki. *Electronic Turkish Studies*, 11(3). 2333-2354.
- WHO. (2014). Psychological First Aid for Ebola Virus Disease Outbreak: Report. Geneva: World Health Organization; 2014. <http://www.apps.who.int/iris/bitstream/10665/131682/1/9789>
- WHO. (2020a). Rolling Updates on Coronavirus Disease (COVID-19). URL <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>
- WHO. (2020b). Coronavirus Disease (Covid-19) Outbreak: Rights, Roles And Responsibilities Of Health Workers, Including Key Considerations For Occupational Safety and Health Cited May 19, 2020]. Available from: https://www.who.int/docs/default-source/coronaviruse/who-rights-roles-respon-hw-covid-19.pdf?sfvrsn=bcabd401_0