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ARAŞTIRMA / RESEARCH

Impact of level of income and occupational factors on mental health during COVID-19 lockdown in Turkey

Gelir düzeyi ve mesleki faktörlerin Türkiye'de COVID-19 kapanması döneminde ruh sağlığı üzerindeki etkisi

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Abstract

Purpose: This study aimed to investigate the impact of level of income and occupational factors on mental health during the COVID-19 lockdown in Turkey.
Materials and Methods: The study has a cross-sectional, descriptive design and 768 participants were included. The data were collected via an electronic survey by sharing the link in social media groups. Monthly household income (MHI) and occupational characteristics of the participants were investigated during COVID-19 lockdown. Psychological measurements were performed via PHQ-4 and Fear of COVID-19 scales.
Results: Regarding MHI; participants with a MHI of €299 or less had significantly higher levels of anxiety and depression compared to those with a MHI of €1000 or higher. Regarding occupational groups; the unemployed and students had higher anxiety and depression levels compared to housewives/retired individuals, business owners, government officials and health workers. It was determined that partial remote work and working at the workplace were protective against anxiety and depression, respectively.
Conclusion: Conditions such as unemployment, low level of income and the decreased social interaction related to working style were found to be associated with higher depression and anxiety levels during the pandemic.

Keywords:. COVID-19, workplace, level of income, depression, anxiety

Öz

Amaç: Bu araştırma, Türkiye'de gelir düzeyi ve mesleki faktörlerin COVID-19 kapanması sırasında ruh sağlığı üzerindeki etkisini araştırmayı amaçlamıştır.
Gereç ve Yöntem: Araştırma kesitsel ve tanımlayıcı bir tasarıma sahiptir ve toplam 768 katılımcı araştırmaya dahil edilmiştir. Veriler, sosyal medya gruplarında bağlantısı paylaşılan elektronik anket yoluyla elde edilmiştir. COVID-19 kapanması sırasında katılımcıların aylık hane geliri düzeyi (AHG) ve mesleki özellikleri ile çalışma durumları incelenmiştir. Psikolojik durumla ilgili ölçümler PHQ-4 ve COVID-19 korkusu ölçekleri ile yapılmıştır.
Bulgular: Sonuçlar AHG açısından değerlendirildiğinde, AHG'si €299 veya daha düşük olan katılımcılarda, AHG'si €1000 ve daha yüksek olanlara göre anlamlı olarak daha yüksek anksiyete ve depresyon düzeyleri saptanmıştır. Meslek grupları ile ilgili olarak; işsizlerin ve öğrencilerin, ev hanımları/emekli bireylere, iş yeri sahiplerine, devlet memurlarına ve sağlık çalışanlarına göre daha yüksek anksiyete ve depresyon düzeylerine sahip olduğu görülmüştür. Kısmi uzaktan çalışmanın ve işyerinde çalışmanın sırasıyla anksiyete ve depresyona karşı koruyucu olduğu bulunmuştur.
Sonuç: İşsizlik, düşük gelir düzeyi ve çalışma şekline bağlı olarak iş ortamındaki sosyal etkileşimin azalması gibi durumların, pandemi sürecinde daha yüksek depresyon ve anksiyete düzeyleri ile ilişkili olduğunu göstermektedir.

Anahtar kelimeler: COVID-19, iş yeri, gelir düzeyi, depresyon, anksiyete

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INTRODUCTION

Similar to major socio-political shifts and wars, contagious diseases have significantly impacted the social life, economics and politics of the world throughout history[1]. The COVID-19 pandemic has been reported to cause psychological distress and mental disorders through the impact of the health-related anxiety, preventive measures and adverse economic consequences which have resulted from prolonged social distancing[2,3]. Preventive measures are eventually effective in decreasing transmission, however, their economic costs are overwhelming around the world[4].

Mental and social effects of COVID-19 pandemic and related factors such as quarantine, isolation, social distancing and lockdown were largely investigated in the general population and COVID-19 patients[5-7]. However, the impact of the socioeconomic factors such as level of household income, occupational status and working style (i.e., remote work or working at the workplace) on the psychological distress and fear of COVID-19 were not yet well documented though the impact of the pandemic extended beyond medical repercussions and had tremendous effects on the social and professional life[8].

Although developing countries were less impacted by the COVID-19 emergency, they have stronger constraints in terms of savings, social policy and health organization that may cause more psychological distress in the population during and after the pandemic[9]. This sudden crisis may lead to enormous long-lasting challenges for the mental health of labourers especially in developing countries. The International Labour Organization (ILO) estimated that 495 million full time equivalent jobs were lost in the second quarter of 2020 due to COVID-19 pandemic, and countries with lower and middle income are expected to be the hardest hit[10]. Accordingly, individuals who work in low-wage range and part-time employment are expected to be more vulnerable to the lockdowns compared to white-collar workers who may fully or partially work from home[11].

The main purpose of our study is to investigate the levels of depression, anxiety and fear of COVID-19 of the individuals regarding the household income level and occupational characteristics, and to determine the impact of these factors on the adverse mental health consequences of the pandemic during the lockdown in Turkey, as a developing country.

MATERIALS AND METHODS

Study design and sample

This is a descriptive study which was conducted in cross-sectional design. A snowball sampling technique was used and the participants were restricted to 18-75 years old. The data were collected via an electronic survey distributed by the researchers by sharing the link in social media groups (via public forums and social media networks such as mail groups, Facebook and Whatsapp). Google Surveys application was used to help data collection. The data were collected between December 15 and 30, 2020 when Turkey was under partial lockdown due to the second wave of the pandemic. A total of 902 survey responses were received. However, 134 of them were excluded due to incomplete data. Finally, 768 survey forms completed by the participants were enrolled in the study. The study has been carried out in accordance with the 1964 Declaration of Helsinki and its later amendments and all participants provided online informed consent. The study was approved by the Ethics Committee of Istanbul Kent University (Decision No:04/28.05.2020) and COVID-19 Scientific Review Board of Turkish Ministry of Health.

Measures

Sociodemographic and Clinical Data Form

The form included questions regarding; age (age groups: <29, 30–49, 50>); gender; level of education (primary/high school, associate/graduate); marital status (single, married, divorced/widowed), habitation (alone, with spouse/partner and/or children, with parent(s) and/or sibling(s), friend(s) and other); occupational status (government official, business owner, private sector employee, health worker, housewife/retired, student unemployed); working style (not actively looking for work, work remotely, partially work remotely/at least 1 or 2 days a week of remote work, working at the workplace); monthly household income (MHI) (MHI levels: <€299, €300-499, €500-749, €750-999, >€1000), MHI was investigated as Turkish Lira and converted to € by the authors and the baseline was determined as €300 which correspond to 2500 Turkish Liras, the

official minimum wage in Turkey; pre-existing medical condition (moderate to severe conditions: diabetes, cardiovascular diseases, organ failure, cancer); and pre-existing mental disorder.

Fear of COVID-19 Scale (FoCS)

The scale developed by Ahorsu et al. has 7 items and a single dimension[12]. The scale does not have inversely coded items and high scores mean higher levels of fear of COVID-19. The scale specifically evaluates the mental, physiological and emotional consequences related with coronavirus. The scale was adapted into Turkish by Satıcı et al.[13].

Patient Health Questionnaire-4 (PHQ-4)

The Patient Health Questionnaire-4 (PHQ-4) is a valid ultra-brief tool for detecting both anxiety and depression as these conditions are the most frequent mental disorders among the general population[14]. PHQ-4 consists of a depression subscale (PHQ-2) and an anxiety subscale (GAD-2). The GAD-2 is a two-item scale derived from PHQ for detecting anxiety disorder and has acceptable properties for identifying anxiety at a cut-off score as ≥3 (out of a possible score of 6)[15]. The PHQ-2 is a two-item scale derived from PHQ and a valid and practical tool to establish detection of depression[15]. A cut-off point of ≥3 (out of a possible score of 6) in PHQ-2 found to have a high sensitivity and specificity to identify clinically significant depression[16]. The original PHQ form from which PHQ-2 and GAD-2 scales were derived, was adapted into Turkish by Yazıcı Güleç et al.[17].

Statistical analysis

IBM SPSS 22 package program was used for the statistical analysis. Descriptive statistics were calculated including, means, frequencies and percentages. We used the chi-square test to compare nominal variables. The comparison of the continuous variables including two categories, and three or more categories were performed via Student t-test and one-way ANOVA, respectively. Post-hoc multiple comparisons were performed using the Games-Howell test as it does not assume equal variances and sample sizes. Finally, logistic regression analysis was performed to assess the impact of the factors related to anxiety and depression, respectively (a cut-off score of ≥3 for both GAD-2 and PHQ-2 were used to determine anxiety and depression). Working style, occupational status and MHI were included into the logistic regression model as possible predictors of anxiety and depression.

RESULTS

Of the 768 participants 459 (59.8%) were female; 381 (49.6%) were married, while 318 (41.4%) were single. The majorty of the participants were aged between 18-29 (26.2%) and 30-49 (65.5%). The data on the sociodemographic characteristics of the participants were provided in Table 1.

Table 1. Sociodemographic characteristics of the participants

n=768		**n**	**(%)**
Gender	Female	459	59.8
	Male	309	40.2
Age	18-29	202	26.3
	30-49	495	65.5
	50 and older	71	9.2
Marital Status	Single	318	41.4
	Married	381	49.6
	Divorced/Widowed	69	9
Habitation	Alone	151	19.7
	Spouse and/or children	407	53
	Parent(s) and/or sibling(s)	172	22.3
	Friend(s) and/or other	38	5
Having Children	Children	376	51.1
	No Children	392	48.9
Level of Education	Primary/High school	125	13.7
	Associate/Graduate	643	83.8

We found a significant difference in PHQ-2 and GAD-2 scores regarding the levels of MHI (both p values <0.01) while FoCS scores did not differ (p>0.05). Post-hoc Games-Howell analysis showed that individuals with a €299 or less MHI had higher GAD-2 and PHQ-2 scores than those with a 1000 € and more MHI (both p values <0.01).

Significant differences were found in GAD-2, PHQ-2 and FoCS scores among the participants regarding occupational status (p<0.001, p<0.001, p<0.01, respectively). Post-hoc Games-Howell analysis revealed that students had higher GAD-2, PHQ-2 and FoCS scores than other participants (all p values <0.001) except for the unemployed (p: 0.973; p: 0.956; p: 0.943, respectively). Individuals who were partially working remotely and working at the workplace had lower GAD-2 and PHQ-2 scores than those who were not actively looking for work (both p values <0.01). The data on MHI and occupational characteristics, and the comparison of GAD-2, PHQ-2 and FoCS scores of the participants are provided in Table 2.

Partial remote work was found to be related to anxiety and was found to decrease the risk for anxiety by 0.4 times (p<0.05, OR: 0.397, 95%CI 0.174-0.905). Working at the workplace was found to be related to depression and was found to decrease the risk for depression by 0.5 times (p<0.05, OR: 0.507, 95%CI 0.270-0.953). The data on factors related to anxiety and depression are provided in Table 3.

Table 2. Comparison of GAD-2, PHQ-2 and FoCS Scores Regarding MHI and Occupational Characteristics

n:768		**n**		**GAD-2**	**PHQ-2**	**FoCS**
			(%)	Mean± S.D.	Mean± S.D.	Mean ± S.D.
MHI	€299 or less	38	5.0	1.90±1.73	2.53±1.90	2.55±1.05
	€350 - €499	107	13.9	1.85±1.88	2.14±1.90	2.42±1.02
	€500 - €749	169	22.0	1.56±1.44	2.25±1.70	2.56±0.88
	€750 - €999	104	13.5	1.43±1.37	1.85±1.54	2.44±0.88
	€1000 or higher	350	45.6	1.27±1.15	1.70±1.51	2.37±0.86
				f: 3.51 *p*: 0.007**	*f*: 3.80 *p*: 0.005**	*f*: 0.93 *p*: 0.444
Occupational Status	Government Official	115	15	1.16±1.21	1.70±1.47	2.46±0.91
	Business owner	170	22.1	1.29±1.20	1.66±1.38	2.28±0.81
	Private sector employee	264	34.3	1.57±1.42	1.49±1.68	2.47±0.91
	Health worker	30	3.9	1.07±1.23	1.67±1.75	2.26±0.79
	Housewife/Retired	59	7.7	1.29±1.54	1.80±1.70	2.50±1.01
	Student	62	8.1	2.42±1.70	3.13±1.82	2.55±0.95
	Unemployed	68	8.9	2.15±1.77	2.81±1.89	2.83±0.89
				f: 9.586 p<0.001***	f: 10.601 p<0.001***	f: 3.379 p: 0.003**
Working Style	Not actively looking for work (i.e. housewife, retired, student, unemployed or on leave)	254	33.1	1.86±1.66	2.43±1.84	2.56±0.94
	Remote work	245	31.9	1.41±1.34	1.89±1.56	2.40±0.79
	Partial remote work	120	15.6	1.29±1.17	1.71±1.42	2.43±0.94
	Working at the workplace	149	19.4	1.34±1.38	1.64±1.52	2.40±0.97
				f: 6.992 *p*< 0.001***	*f*: 9.861 *p*<0.001***	*f*: 1.643 *p*:0.341

€: Euro.; *f*: Anova; FoCS: Fear of COVID-19 Scale; MHI: monthly household income; *t:* Student t-test; *significant at level *p*<0.05; **significant at level *p*<0.01; *** significant at level *p*<0.001.

Table 3 Factors related to anxiety and depression

Independent Variable	Anxiety (GAD-2 ≥ 3)				Depression (PHQ-2 ≥ 3)			
	β	Wald	p	OR (%95 CI)	β	Wald	p	OR (%95 CI)
Working Style (Not actively looking for work)		6.381	0.094			5.293		
Remote work	-0.623	3.129	0.077	0.537 (0.269-1.070)	-0.487	2.880	0.090	0.615 (0.350-1.078)
Partial remote work	-0.925	5.832	**0.028***	0.397 (0.174-0.905)	-0.613	3.313	0.069	0.542 (0.280-1.048)
Working at the workplace	-0.199	0.284	0.594	0.820 (0.395-1.702)	-0.679	5.448	**0.035***	0.507 (0.270-0-953)
Occupational Status (Government Official)		5.177	0.521			5.888		
Business owner	0.376	0.755	0.385	1.456 (0.624-3.400)	0.442	1.643	0.200	1.557 (0.791-3.062)
Private sector employee	0.432	1.203	0.273	1.540 (0.712-3.333)	0.430	1.856	0.173	1.537 (0.828-2.851)
Health Worker/Law Enforcement	-0.380	0.240	0.624	0.684 (0.150-3.124)	0.317	0.324	0.570	1.373 (0.460-5.097)
Housewife/Retired	-0.047	0.006	0.938	0.954 (0.288-3.162)	0.170	0.126	0.723	1.186 (0.463-3.037)
Student	0.831	2.201	0.138	2.295 (0.766-6.876)	0.864	3.173	0.075	2.373 (0.917-6.140)
Unemployed	0.161	0.090	0.765	1.175 (0.409-3.379)	0.750	2.845	0.092	2.117 (0.886-5.061)
MHI (€299 or less)		6.771	0.148			3.849		

€: Euro; GAD-2: Generalized Anxiety Disorder-2 Scale; MHI: monthly household income; PHQ-2: Patient Health Questionnaire-2: *t:* Student t-test; *significant at level $p<0.05$.

DISCUSSION

The major findings of our study were as follows: (i) participants with a MHI of €299 or less had significantly higher levels of anxiety and depression compared to those with a MHI of €1000 or higher (ii) partial remote work was found to be protective against anxiety and working at the workplace was found to be protective against depression.

Anxiety and depressive disorders were recognized among the most consistent psychological findings of adverse economic experiences in COVID-19 and previous economic crises[9,18]. In a study conducted in six European countries during the COVID-19 lockdowns, individuals employed in lower prestige ranked occupations (lower-pay and lower-skill) were found to be more prone to experiencing feelings of depression and health anxiety[19]. The authors emphasized that the mental health consequences of the economic hardship due to COVID-19 are more prominent for the workers who are in the most vulnerable segments of European labour markets. Workers employed in lower prestige-ranked occupations had to face a much greater risk of work-hours decreases, income and job loss due to the lockdowns and business suspensions.

Our study revealed that anxiety and depression levels were higher in individuals living in poor socio-economic conditions (€299 MHI or less) than others, while COVID-19-related fear was at similar levels. Increased psychological distress in this population could also be related to living in a household with a low economic background which does not offer

adequate financial and cultural resources to cope with adverse experiences[9].

Unemployed individuals and students had higher GAD-2 and PHQ-2 scores and the former had also higher FoCS scores than other groups. Previous studies have reported that individuals' concerns on economic and social aftermaths of the pandemic both cause an increase in psychological distress[20-23]. Furthermore, the stability of family income was found to be a significant protective factor against anxiety during the COVID-19[24]. The loss of employment may not only cause economic difficulties for individuals, it could also result in lack of social interaction and losing social security benefits that may induce concerns on accessing to health care services during the pandemic[25]. This could be the underlying cause of high levels of FoCS as well as depression and anxiety among the unemployed in our study while other participants' FoCS scores did not differ regarding the MHI level. Our findings were consistent with the findings of a similar study from United States[26]. Increased levels of depression and anxiety reported by the students were also consistent with previous studies conducted during the pandemic[24,27·] This has probably resulted from the disrupted academic schedule and daily routines of the students and concerns about the future as a result of decreasing job opportunities after the pandemic. The relatively weak social services in Turkey as a middle income country might be another reason for higher depression and anxiety levels of lower income and unemployed individuals, and students in our study. Within this context, mental health providers should create awareness in politics and society as the rising economic concerns and unemployment are expected to result in increased rates of suicides in the near future[28].

Increased use of technology due to preventive measures and lockdowns was reported to cause additional psychological distress for workers[29]. This is also probably related to the loss of social interaction in the workplace, which could be protective against psychological distress as the social relations and feelings of belonging were reported to be essential for psychological wellbeing[30]. In our study, individuals who reported to partially work remotely and those who were working at the workplace had lower anxiety and depression levels and these factors were found to be protective against anxiety and depression, respectively. Accordingly, authors from Finland have reported higher COVID-19 anxiety in individuals who were working remotely during the pandemic due to the loss of social interaction in the workplace[31]. A study from Japan reported that partial remote work did not affect work productivity while full-remote work was shown to reduce work performance[32]. The authors also reported that partial remote work may reduce psychological and physical stress responses while full-remote work may result in presenteeism (loss of work productivity). Similarly, another study from Latin America reported that remote work was related with increased perceived stress, and reduced work-life balance and job satisfaction[33]. Our results confirm the positive effect of social interaction in the workplace on psychological distress during the pandemic and also suggest that maintaining social relations in workplace could improve psychological distress during the pandemic. Individual preferences and mental conditions of the workers should be taken into account when choosing a working style. Regarding the lower psychological distress levels of the participants who were partially working remotely and the protective effect of this factor for psychological distress, our results suggest that partial remote work could be an effective compromise that balances the protective and adverse effects of preventive measures and should be taken into consideration by health policy-makers.

The present study has several limitations: our study was conducted via online invitations and the data were collected via an online self-report survey, thus we were not able to know the participation rate and the data may contain possible bias of self-report measurement and higher levels of homogeneity. Our study has a cross-sectional design, however, prolonged preventive measures could result in stronger impact on mental well-being at later stages, our data does not present longitudinal outcomes. Finally, in this preliminary study, the effects of the current economic and occupational conditions on the mental health of individuals were investigated, however, the long-term socioeconomic and occupational effects of the pandemic such as job loss, income loss and job-related threats during the course of the pandemic were not investigated.

Since economic recession and adverse effects of preventive measures in social and occupational life during the COVID-19 pandemic are deteriorating mental well-being and increase the psychological distress, mental health could be the next challenge worldwide. Mental health professionals have to probe

patients for their economic and occupational concerns to provide mental and social support for vulnerable individuals such as the unemployed, workers with lower income or students, by taking possible socioeconomic risk factors into consideration. We believe that it is an essential responsibility for policy-makers to take action concerning the mental health of the employees and redress the balance between preventive measures and economics. Larger studies are needed to examine the effects of socioeconomic and occupational factors on mental health, such as job loss, income loss, and work-related threats during the COVID-19 pandemic.

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