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Investigation of Trait Anxiety and Death Anxiety Experienced in the Covid 19 Pandemic in Terms of Physical Activity Status

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Abstract

With the emergence of Covid-19, people's lifestyles have changed due to restriction measures. This situation has caused various adverse psychological effects on people. The study aimed to examine individuals' death anxiety and trait anxiety levels regarding physical activity status during the pandemic. In this context, 475 university students, 275 (57.9%) female, and 200 (42.1%) male participated in the research. The trait anxiety section of the State-Trait Anxiety Inventory was used to detect the trait anxiety of the participants, and the Abdel-Khalek Death Anxiety Scale was used to determine the death anxiety. Independent Samples T-Test and One Way Anova, parametric tests, were applied to the collected data. According to the research findings, there is a statistically significant difference in trait anxiety and death anxiety levels according to whether to do physical activity during the pandemic. The results show that the death anxiety and trait anxiety levels of individuals who do physical activity are lower than those who do not do sports. As a result, it can be said that individuals who continue to do sports despite various limitations during the pandemic period are less exposed to the adverse psychological effects of the pandemic.

Keywords: University Students, Pandemic, Trait Anxiety, Death Anxiety, Physical Activity

1. Introduction

After the Spanish Flu, which had the highest death rate globally between 1918-1920, the Covid-19 pandemic, which had a death rate of over 6 million as of January 2021, first appeared in Wuhan, China, at the end of 2019. Traveling from one part of the world to another within hours has caused the epidemic to spread very quickly around the world, and since the first months of 2020, cases have started to be seen in many countries of the world (WHO, 2021). In the beginning, the complete unknown of the pandemic form and the absence of a drug or vaccine for the disease led countries to take different measures. These measures have revealed an isolated lifestyle in the most general sense. Curfews were imposed on millions of people, schools were directed to distance education, and workplaces were suspended during the peak periods of the epidemic, except for compulsory business sectors (Banerjee, 2020; Silva et al., 2021). In other words, people were forced to choose an asocial lifestyle, causing them to experience emotional and physical loneliness. Therefore, the effect of the pandemic has begun to appear not

only physically but also psychologically. Taylor et al. (2020) argue that the number of people psychologically affected by the Covid 19 pandemic is greater than the number of people physically affected. When the literature is examined, it is seen that this epidemic causes adverse emotional reactions such as anxiety, fear, and anger in individuals, increases their stress levels, increases their susceptibility to psychological disorders such as anxiety disorders, depressive disorders, post-traumatic stress disorder, and causes suicidal thoughts and insomnia (Bekaroğlu & Yılmaz, 2020; Giusti et al., 2020; Kontoangelos et al., 2020).

The news in the visual and print media during the Covid 19 epidemic process, the rapid increase in cases, and the increase in death rates caused panic in people (Saravanan et al., 2020). Experts stated that the psychological conditions observed in previous epidemics also occurred during this pandemic and that psychological effects such as anxiety and fear occur in humans (Lee et al., 2020; Wheaton et al., 2012; Zhang et al., 2020). Although anxiety and fear are confused in the literature (Türkçapar, 2004), fear is defined as a response to a concrete stimulus, while anxiety is defined as an internal stimulus (Morgan, 2010).

Although anxiety is the emotional state that everyone experiences, it can cover a specific period or be an emotional state that lasts throughout a person's life. Spielberger et al. (1971) explain this under two headings: state and trait anxiety. State anxiety is a temporary mood disorder experienced before or during a potential threat (Tindall et al., 2021). In other words, when the factor that causes stress in state anxiety disappears, the level of anxiety decreases over time. Trait anxiety, on the other hand, is a state of emotion that causes individuals to interpret the situations they are in severely or negatively, mainly arising from the uncertainty of the future. It is not dependent on any event and is the person's living by producing scenarios as if he had a non-existent situation (Toktaş, 2017).

Although they do not have any chronic diseases in the Covid 19 pandemic, the high number of deaths in the young population triggers death anxiety among young people. Being the only species with the cognitive capacity to think about its death may seem an impressive ability at first glance, but awareness of death can generate intense anxiety (Menzies & Menzies, 2020). The first emotion that occurs in human beings is death anxiety and forms the basis of other anxieties (Irvin, 2017). Situations such as separation from loved ones and the end of their existence cause death anxiety, and the uncertainty after death reveals anxiety. It has been reported that death anxiety is associated with harmful health outcomes such as exposure to life-threatening events, decreased physical functions, psychological stress, and life satisfaction (Rababa et al., 2021).

Anxiety is one of the most critical threats to human psychology. At this point, there is a general belief that physical activity and exercise positively affect mood and anxiety. Numerous studies demonstrate the relationship between physical activity and anxiety and the anxiolytic and antidepressive effects of exercise (Cooney et al., 2013; Paluska & Schwenk, 2000; Ströhle, 2009).

Although scientific studies examining the adverse psychological effects of the pandemic on society have been intensively researched recently, it is seen that studies investigating the relationship between these effects and physical activity are not sufficiently focused. In this context, the primary purpose of the research is to examine the negative psychological state of the pandemic, trait anxiety, and death anxiety in terms of physical activity. The results obtained from the study contain essential information on how to protect the psychological health of individuals during the Covid 19 pandemic and the pandemic processes that may be encountered later.

The other sub-purpose of the study is to examine trait anxiety and death anxiety experienced during the pandemic process according to various socio-demographic characteristics.

2. Method

2.1 Model of the Research

This research was designed according to survey research, which is one of the quantitative approaches aiming to measure the existing situation by objectifying it according to numerical data (Cohen et al., 2002; Karasar, 2014). Survey research is one of the patterns of the quantitative approach and is a method frequently used in social

sciences. This method identifies and describes a group's characteristics and presents the current situation (Büyükoztürk et al., 2012; Karasar, 2014).

2.2 Participant (Subject) Characteristics

A total of 475 university students, 275 female and 200 males, studying at various faculties at Erzurum Technical University and Atatürk University in the academic year of 2020-2021, participated in the research. Wright and Swan (2001) recommend 30-60 minutes of exercise 3-4 times weekly for physical and psychological well-being. Therefore, in addition to socio-demographic questions, the participants were initially asked about the duration of weekly exercise and 30 minutes a day, at least three days a week. Individuals whom exercise and individuals who do not exercise were included in the study, and two groups were formed.

Due to the pandemic, an easy sampling method was used, and the scales were delivered to the participants via Google forms on digital platforms. In the study, which was based on volunteerism, 38 participants had a chronic illness, and 101 were found to have been infected with the Covid 19 virus before due to the answers given. Detailed demographic variables of the participants are given in Table 1.

Table 1: Demographic information of the participants

Category		n	%
Gender	Female	275	57,9
	Male	200	42,1
Chronic Disease	Yes	38	8,0
	No	437	92,0
Covid Pass Status	Yes	101	21,3
	No	374	78,7
Physical Activity Status	Yes	216	45,8
	No	259	54,2

2.3 Data Collection Tools

2.3.1 Abdel-Khalek Death Anxiety Scale

It was developed by Abdel-Khalek (2004) to determine the death anxiety levels of individuals. The scale consists of 20 items, each grading over 5 points (1 = not at all and 5 = a lot). 1636 people from Syria, Egypt, and Kuwait were included in the validity and reliability study, and the Cronbach alpha coefficient was found between 0.88 and 0.93. The scale was adapted to Turkish by Sarıççek Aydoğan et al. (2015) ($\alpha=0.86$). As a result of the analyzes performed in this study, the reliability value was found as $\alpha=0.89$. The scale consists of five sub-dimensions: fear of death-related visual stimuli, fear of physical and mental pain associated with death, fear of other situations reminding death, fear of the afterlife, and fear of death itself.

2.3.2 State-Trait Anxiety Inventory

It was developed by Spielberger et al. (1971) and designed as a 4-point Likert scale. The Turkish validity and reliability of the scale were done by Öner and Le Compte (1983). The scale has two parts state anxiety and trait anxiety. The trait anxiety section was used in this study to examine the long-term impact of the pandemic. Alpha reliability of the 20-item trait anxiety scale (TAS) was between .83 and .87, and test-retest reliability was found to be between .71 and .86 (31).

2.4 Ethics Committee Permission

Due to the pandemic, the researchers reached the participants via digital platforms. They obtained the data as the universities provided services with distance education for specific periods, and the absence of attendance during

face-to-face education periods made it difficult to reach the student groups. XXXXXXXXX dated XXXXXXXX was obtained from the Sub-Ethics Committee of XXXXX University Faculty of Sport Sciences before the data were collected.

2.5 Data Analysis

After controlling the data obtained, the researchers analyzed the data in the SPSS Package program and found that the kurtosis and skewness values were between +2 and -2. Since this result indicates that the research data are normally distributed (Tabachnick et al., 2007), the parametric tests Independent Samples T-Test and One Way Anova test were applied to the data.

3. Results

In this part of the study, the results obtained from the analyzed data are presented. The analysis results regarding the gender variable of trait anxiety and death anxiety are presented in Table 2.

Table 2: Examination of trait anxiety and death anxiety in terms of gender variable

Variable	Gender	n	\bar{x}	ss	t	p
Trait Anxiety	Female	275	3,03	0,67	4,859	,000**
	Male	200	2,73	0,65		
Visual Stimulus	Female	275	3,31	1,19	8,203	,000**
	Male	200	2,40	1,20		
Physical and Mental Pain	Female	275	3,78	0,99	3,527	,000**
	Male	200	3,44	1,13		
Other Situations	Female	275	2,44	1,08	5,760	,000**
	Male	200	1,89	0,97		
Afterlife	Female	275	3,58	1,12	4,890	,000**
	Male	200	3,06	1,22		
Fear of Death Itself	Female	275	2,89	1,09	3,066	,002*
	Male	200	2,58	1,12		
Death Anxiety	Female	275	3,23	0,88	6,519	,000**
	Male	200	2,68	0,95		

* $p < 0.05$, ** $p < 0.01$

As shown in Table 2, a significant difference was found because of the analyzes performed to examine trait and death anxiety in terms of gender ($p < 0.05$). It was observed that female participants had higher scores on the Trait Anxiety Scale than male participants ($\bar{X}_{\text{female}} = 3,03 \pm 0,67$, $\bar{X}_{\text{male}} = 2,73 \pm 0,65$).

As a result of the analyzes conducted to determine the death anxiety levels of university students during the pandemic period, a significant difference was found in favor of females ($\bar{X}_{\text{female}} = 3.23 \pm 0.88$, $\bar{X}_{\text{male}} = 2.68 \pm 0.95$) between the death anxiety scale and total scores from all sub-dimensions in terms of gender ($p < 0,05$).

Table 3 shows the findings of the analyses conducted to examine the trait anxiety and death anxiety levels of university students, which is another study's sub-problems, according to their chronic disease status.

Table 3: Examination of trait anxiety and death anxiety in terms of chronic disease status

Variable	Chronic Disease	n	\bar{x}	ss	t	p
Trait Anxiety	Yes	38	3,34	0,60	4,063	,000**

	No	437	2,87	0,68		
Visual Stimulus	Yes	38	3,28	1,18	1,752	,080
	No	437	2,90	1,28		
Physical and Mental Pain	Yes	38	4,28	0,89	3,881	,000**
	No	437	3,59	1,07		
Other Situations	Yes	38	2,54	1,02	1,966	,050*
	No	437	2,18	1,07		
Afterlife	Yes	38	3,78	1,09	2,244	,025*
	No	437	3,33	1,19		
Fear of Death Itself	Yes	38	3,43	1,19	3,891	,000**
	No	437	2,70	1,09		
Death Anxiety	Yes	38	3,48	0,88	3,232	,001**
	No	437	2,96	0,95		

*p<0.01, ** p<0.00

As a result of the analyzes made on the trait anxiety status of the chronic disease status variable of university students, a statistically significant difference was found in favor of the participants with chronic diseases ($\bar{X}_{yes}=3.34\pm.60$, $\bar{X}_{no}=2.87\pm.68$) ($p<0,05$).

When the analysis of the death anxiety scale total scores and sub-dimensions of the chronic illness status variable were examined, significant differences were found in favor of those with chronic illness in the sub-dimensions of Physical and Mental Pain ($\bar{X}_{yes}=4,28\pm,89$, $\bar{X}_{no}=3,59\pm1,07$), Other Situations ($\bar{X}_{yes}=2,54\pm1,02$, $\bar{X}_{no}=2,18\pm1,07$), Afterlife ($\bar{X}_{yes}=3,78\pm1,09$, $\bar{X}_{no}=3,33\pm1,19$), Fear of Death Itself ($\bar{X}_{yes}=3,43\pm1,19$, $\bar{X}_{no}=2,70\pm1,09$), and Death Anxiety Scale ($\bar{X}_{yes}=3,47\pm,88$, $\bar{X}_{no}=2,96\pm,95$).

The analysis results of the trait anxiety and death anxiety levels of university students, which is the third sub-problem of the study, according to their previous Covid 19 status, are given in Table 4.

Table 4: Examination of trait anxiety and death anxiety in terms of Covid status

Variable	Covid Status	n	\bar{x}	ss	t	p
Trait Anxiety	Yes	101	2,87	0,68	-,648	,517
	No	374	2,92	0,69		
Visual Stimulus	Yes	101	2,86	1,15	-,620	,536
	No	374	2,95	1,31		
Physical and Mental Pain	Yes	101	3,78	0,94	1,481	,139
	No	374	3,60	1,10		
Other Situations	Yes	101	2,10	0,99	-1,175	,240
	No	374	2,24	1,09		
Afterlife	Yes	101	3,37	1,14	,000	1,000
	No	374	3,37	1,21		
Fear of Death Itself	Yes	101	2,84	1,04	,764	,445
	No	374	2,74	1,14		
Death Anxiety	Yes	101	3,01	0,86	,077	,938
	No	374	3,00	0,98		

As can be seen in Table 4, no statistically significant difference was found between the scores obtained from the Trait Anxiety ($\bar{X}_{yes}=2,87\pm,68$, $\bar{X}_{no}=2,92\pm,69$) and Death Anxiety Scales ($\bar{X}_{yes}= 3,01\pm,86$, $\bar{X}_{no}=3,00\pm,98$) as a result of the analyzes made on the variable of being infected with Covid-19 by university students before ($p<0.05$). The analysis results regarding the analysis of trait anxiety and death anxiety levels, the fourth sub-problem of the study, according to the physical activity status of the participants, are given in Table 5.

Table 5: Examination of trait anxiety and death anxiety in terms of physical activity

Variable	Physical Activity	n	\bar{x}	ss	t	P
Trait Anxiety	Yes	216	2,77	0,65	-2,546511	0,011*
	No	259	2,96	0,69		
Visual Stimulus	Yes	216	2,74	1,31	-1,829501	0,067
	No	259	2,99	1,26		
Physical and Mental Pain	Yes	216	3,53	1,14	-1,272576	0,203
	No	259	3,68	1,05		
Other Situations	Yes	216	2,18	1,21	-0,414776	0,678
	No	259	2,22	1,02		
Afterlife	Yes	216	3,28	1,18	-0,910159	0,363
	No	259	3,39	1,20		
Fear of Death Itself	Yes	216	2,65	1,21	-1,225290	0,221
	No	259	2,80	1,09		
Death Anxiety	Yes	216	2,89	1,04	-1,452859	0,146
	No	259	3,04	0,92		

* $p<0.01$

The results of the analyzes conducted to determine the trait anxiety and death anxiety levels of individuals who do/not do physical activity during the pandemic process are shown in Table 5. According to the results obtained, it is seen that the trait anxiety levels of individuals who do/not do physical activity are higher than those who do physical activity ($\bar{X}_{yes}=2.77\pm.65$, $\bar{X}_{no}=2.96\pm.69$) ($p<0.05$). No statistically significant difference was found in the Death Anxiety Scale and all its sub-dimensions ($\bar{X}_{yes}=2.89\pm.65$, $\bar{X}_{no}=2.96\pm.69$).

4. Discussion and Conclusion

Despite the decrease in the number of cases with vaccination and social distances since its emergence, the psychological effects continue today due to the negative consequences of the Covid 19 virus epidemic, such as death and intubation (WHO, 2021). Although the death and severe disease rates are high in the elderly population, it is known that they are not insignificant among the young population. The psychological effects of the disease and its physical effects have been the subject of research, and studies have shown that the pandemic reveals negative factors such as stress, anxiety, and depression (Khan et al., 2020). The news that is made very frequently in the visual and written media is one of the factors that cause people to be affected spiritually. Due to developing technological opportunities, individuals are expected to spend more time on social media (Hudimova et al., 2021) and be affected more spiritually because they are more exposed to pandemic news. Although physical activity contributes to the psychological well-being of individuals, it has caused a decrease in the level of participation in physical activity, especially during and after the restriction period. The research in this context examines individuals' death anxiety and trait anxiety levels regarding physical activity during the Covid 19 pandemic.

In the findings related to the gender factor, which is the first of the sub-hypotheses of the research, it was determined that female participants' death anxiety and trait anxiety levels were higher than male participants. Rossi et al. (2020), in their study in which they included a large sample group in Italy, reported that younger age groups had higher levels of stress and anxiety among female participants. In their study with 443 participants from

different universities, Ceviz et al. (2020) found that female participants had higher trait and state anxiety levels than male participants. Although the sample groups and populations (athletes, occupational groups, etc.) vary, many research results reveal that female participants are more affected by the pandemic (Cao et al., 2020; Çölgeçen & Çölgeçen, 2020; Göksu & Kumcağız, 2020).

The fact that female participants experience higher levels of death anxiety than males is in line with the literature (Assari & Lankarani, 2016; Kirchberger et al., 2011; Russac et al., 2007; Zana, 2009). The source of this difference is thought to be that females are more emotional, and males are less willing to admit their fears (Kastenbaum, 2000) openly. Kastenbaum (2000) also suggested that the more significant concern about death reported by females may stem from the fact that they are often the primary caregivers of the deceased. In addition, Templer et al. (1974) defined death anxiety as a feminine phenomenon. They attribute this to the fact that although males tend to express their concerns nonverbally, self-report scales better capture females' concerns. Therefore, it is thought that gender differences in death anxiety may be due to gender differences in language use to share such a complex topic (Kirchberger et al., 2011).

High trait anxiety and death anxiety levels in females reveal that females are more prone to psychological problems and have a higher risk of experiencing mental problems (Alvi et al., 2010; Pieh et al., 2020). In general, it is claimed that the testosterone hormone is effective in the emergence of this situation and that males are more successful in coping with psychological problems since testosterone hormones are higher than females (McHenry et al., 2014).

When we look at the effect of the chronic disease status variable, which is the second sub-hypothesis of the study, on trait anxiety and death anxiety, it was seen that the scores of the participants with chronic diseases were higher. The frequency and intensity of thoughts about death increase in chronic diseases (Francalancia et al., 2021; Khawar et al., 2013; Khodarahimi et al., 2021). Some studies have shown that patients with chronic diseases have more significant death anxiety than healthy controls (Strömberg & Jaarsma, 2008). The data obtained as a result of the virus epidemic spreading in the world is that the course of the disease is worse in individuals with chronic diseases, and the rates of admission to intensive care and death are higher (Sandalcı et al., 2020; Zhou et al., 2020). The announcement of these data to the public by the World Health Organization and the Ministry of Health in our country through the media pushes individuals with chronic diseases to act more cautiously. In this context, the death and trait anxiety states of individuals with chronic diseases are expected to be higher.

According to the World Health Organization (WHO, 2021), on a global basis for January 2021, the number of 481 million cases is around 15 million according to the Ministry of Health (<https://covid19.saglik.gov.tr/>) in our country. The most common symptoms of the virus outbreak, which have an incubation period of about four days after exposure, are headache, cough, pneumonia, high fever, and joint pains (Guan et al., 2020). Fu et al. (2020), who examined studies conducted in various provinces of China, drew attention to the prevalence of high C-Reactive protein and decreased lymphocyte counts in laboratory tests and the prevalence of ground-glass density in tomography examinations. In addition to physiological and clinical studies, psychological studies commonly mention the prevalence of mental problems such as depression, anxiety, and stress (Li et al., 2021). The risk of contracting the disease, uncertainty, fear of losing relatives, and an isolated lifestyle are the leading causes of these psychological problems. However, even after catching the disease and overcoming it, this does not mean that mental problems will end. Because the risk of being caught again, another factor that accompanies the uncertainty and the fear of losing relatives, continues. Official data indicate that antibodies developed in those with covid-19 protect individuals for a certain period. Some cases are caught in the epidemic for the second time. These results show parallelism with our analysis results regarding the variable of having previously passed Covid-19, which is the third sub-hypothesis of the research. There was no statistical difference between the total scores of trait anxiety and death anxiety of university students, whether they had Covid 19 before.

Finally, as a result of the statistical analyzes carried out to determine whether the levels of trait anxiety and death anxiety, which are the main hypothesis of the research, vary according to physical activity; It has been observed that the trait anxiety levels of individuals who do not do physical activity are higher than those who do, and there is no significant difference in terms of death anxiety. Physical activity, in addition to being defined as a set of

exercises performed regularly, is a planned physical activity aimed at maintaining and improving the current health status (Allegre et al., 2006). Many studies reveal the contributions of physical activity to individuals not only physically but also psychologically (Allegre et al., 2006; Gençoğlu & Namlı, 2020; Tükel, 2021). A growing body of empirical studies and several plausible theoretical explanations support that regular exercise provides mental health benefits (Biddle et al., 2000; ISSP, 1992). Many research reviews have reported that exercise, particularly aerobic exercise, is negatively associated with trait anxiety and depression and positively correlates with mental health indicators such as well-being and self-concept (Fox, 2000; McDonald & Hodgdon, 2012).

Females' trait anxiety and death anxiety levels are higher than males are thought to be since they are more affected by environmental factors due to their nature. The fact that individuals with chronic diseases have experienced the Covid 19 epidemic more severely has caused their anxiety levels to be higher. It can be said that individuals who do physical activity have lower levels of anxiety due to their high levels of psychological resilience.

Studies show that social support networks are inversely related to female death anxiety (Fry, 2003). Therefore, integrating females with high death anxiety due to pandemics or illness into social support networks can help females cope with this anxiety. In addition, studies show that high self-esteem is a defense against death anxiety (Routledge, 2012). It can be helped to increase self-esteem by making individuals feel valued and increasing their sense of love and trust.

Considering the positive effects of regular exercise on psychological well-being and resilience, individuals should be encouraged to participate in sports.

The samples of this research are limited to Erzurum province. It is among the suggestions of the researchers to design studies with larger sample groups to fully reveal the current situation.

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