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Examination of State-Trait Anxiety Levels of Smoking Students Preparing for University Exam During the Earthquake

Depremde üniversite sınavına hazırlanan sigara kullanan öğrencilerin durumluk-sürekli kaygı düzeylerinin incelenmesi

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ABSTRACT

Purpose: This study was conducted to examine the state-trait anxiety levels of students who were preparing for the university exam and were smokers during the earthquake.

Method: The study was conducted with 130 people who were preparing for university and smokers who experienced the earthquake in Elazığ Sivrice, the epicenter of which was on January 24, 2020 at 20:55 local time. Data were collected from individuals using the "Individual Information Form" and "State-Trait Anxiety Inventory (STAI I-II)". The obtained data were analyzed with the SPSS 25 program.

Results: It was determined that the state anxiety levels of male subjects and the trait anxiety levels of female subjects included in the study were high. Those who had no idea about the effects of smoking on health had significantly higher trait anxiety levels than others. It was determined that there was a positive and low-level significant relationship between state anxiety and trait anxiety. It was found that the effect of the state anxiety level on the trait anxiety level was significant.

Conclusion: The study concluded that the level of state-trait anxiety is high in individuals who smoke and have earthquake experience and are preparing for university. It is thought that organizing training programs and prioritizing rehabilitation studies can be effective in preventing and/or reducing anxiety that may develop in individuals after an earthquake and developing effective intervention methods to cope with anxiety.

Keywords: Earthquake, State Anxiety, Smoking, Stress, Trait Anxiety.

ÖZET

Amaç: Bu çalışma deprem olgusunda üniversite sınavına hazırlanan ve sigara kullanan öğrencilerin durumluk-sürekli kaygı düzeylerinin incelenmesi amacıyla yapılmıştır.

Gereç ve Yöntem: Çalışma 24 Ocak 2020 tarihinde yerel saatle 20.55'te merkez üssü Elazığ Sivrice depremini yaşamış üniversiteye hazırlanan ve sigara kullanan çalışmaya katılmayı kabul eden 130 kişi ile yürütülmüştür. Bireylerden ''Birey Bilgi Formu'' ve ''Durumluk-Sürekli Kaygı Ölçeği (STAI I-II)'' kullanılarak veriler toplanmıştır. Elde edilen veriler SPSS 25 programı ile analiz edilmiştir.

Bulgular: Çalışmaya dahil edilen erkek olguların durumluk kaygı durumları ve kadın olguların sürekli kaygı durumlarının yüksek olduğu saptanmıştır. Sigaranın sağlık üzerine etkileri hakkında fikri olmayanların diğerlerine göre sürekli kaygı düzeyleri anlamlı şekilde yüksek çıkmıştır. Durumluk kaygı ile sürekli kaygı arasında pozitif yönde düşük düzeyde anlamlı bir ilişki olduğu tespit edilmiştir. Durumluk kaygı düzeyinin sürekli kaygı düzeyine etkisinin anlamlı olduğu bulunmuştur.

Sonuç: Çalışma deprem yaşantısı olan sigara kullanan üniversiteye hazırlanan bireylerde durumluk-sürekli kaygı düzeyinin yüksek olduğu sonucuna varılmıştır. Bireylerde deprem sonrasında gelişebilecek kaygının önlenebilmesi ve/veya azaltılabilmesi ve kaygı ile baş edebilmede etkin müdahale yöntemlerinin geliştirilebilmesi amacıyla eğitim programlarının düzenlenmesinin ve rehabilitasyon çalışmalarına öncelik verilmesinin etkili olabileceği düşünülmektedir.

Anahtar Kelimeler: Deprem, Durumluk Kaygı, Sigara, Stres, Sürekli Kaygı.

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INTRODUCTION

The World Health Organization (WHO) defines disaster as “an event that disrupts normal conditions of existence and causes suffering at a level that exceeds the adaptive capacity of the affected society” (WHO, 2022). Disasters have been an important problem for humanity throughout history. Disasters that occur in some parts of the world can cause serious losses at national and international levels and have dramatic effects on people (Taş and Çakır, 2022). Disasters, which are a universal problem, are examined in two sections as natural and human disasters. Natural disasters are the result of natural causes such as hurricanes, earthquakes, tsunamis and tropical cyclones (Makwana, 2019). Earthquakes are events that occur suddenly and cause destruction, injuries and loss of life in homes (Cred, 2020). Earthquakes are the first in the list of natural disasters (Yardım, 2023). The World Health Organization reported that earthquakes between 1998 and 2017 caused approximately 750,000 deaths and more than 125 million people were affected by earthquakes (Igarashi et al., 2021). In Turkey, there were 269 earthquakes that caused loss of life or damage between 1900 and 2023 (Presidency of the Republic of Turkey, Strategy and Budget Presidency, 2023). The Elazığ earthquake with a magnitude of 6.8 occurred on January 24, 2020 at 20:55 local time in the Sivrice district of Elazığ, and 1185 aftershocks were recorded until February 8, 2020 after this main earthquake. 41 people lost their lives and 1632 people were seriously injured in the main earthquake (Özmen et al., 2023). Earthquake phenomena can cause psychological problems in individuals (Nakajima, 2012). Individuals who lose their loved ones and experience economic problems after a major traumatic event such as an earthquake also have an increased risk of experiencing psychological problems such as nightmares, sleep problems, post-traumatic stress disorder, and dissociative reactions (Johannesson et al., 2011; Bıçakçı and Okumuş, 2023). Therefore, individuals may experience feelings such as shock, surprise, anger, helplessness, powerlessness, loss of confidence, loss of control, fear of death, and anxiety (Yıldız and Akkoyun, 2023). The Elazığ Sivrice earthquake caused great material and spiritual destruction, and many problems including the situations listed above were experienced and recorded. In a study, children and adolescents were asked to write an essay covering descriptions of the earthquake after the Tohoku earthquake and the tsunami that occurred immediately after. The essays written by the students were interpreted by the researchers as the appearance of tsunami waves creating anxiety in children and adolescents. Students' themed compositions such as "weakness, nausea and a funny feeling" were also expressed as physical reactions triggered by fear and anxiety (Hayashi et al., 2012). Another problem

encountered in adolescents who experienced an earthquake is smoking and addiction. In a study examining the drug consumption of adolescents affected by the earthquake in the city of Bam in Iran, it was stated that drug use increased after the earthquake (Sharifian et al., 2019).

Reasons for Teenagers Smoking

It is stated that smoking is an important health problem that threatens human health (Zaher et al., 2004). It is estimated that the number of cigarette users in the world will reach 1.7 billion in 2025 (WHO, 2004). Due to the easy accessibility of cigarettes, their legality, and the fact that they pave the way for addictions to other substances such as heroin, alcohol, and marijuana, it can appear as substance addiction (Yakar et al., 2020). In addition to its addictive effect, smoking is the most important preventable cause of mortality and morbidity in our country. WHO reported that 25% of adults worldwide smoke and approximately 80% of those who smoke live in countries including our country (WHO, 2015). According to TUIK 2016 data in Turkey, smoking is reported to be 40.1% in men over the age of 15 and 13.3% in women. It is also estimated that these rates will continue to increase rapidly (TUIK, 2016). It is known that individuals experience smoking during adolescence due to the following situations (Kasatura, 1998; Kassel et al., 2003):

- Thinking that they cannot cope with stress when they quit smoking
- Thinking that they will eat too much when they quit smoking
- Being able to leave negative moods such as fear, anger, and anxiety and switch to a calming, pleasurable and satisfying positive mood
- Taking those who smoke as an example in their environment
- Envying their friends
- Disaster situations such as earthquakes
- Peer pressure
- Escaping anxiety
- Not being excluded from the social environment
- The idea that one time will not be a problem
- Curiosity
- Wanting to prove that they are grown up
- Growing up in a family that talks about smoking as a stress reliever and a factor that helps to focus
- Thinking that smoking can help them

Types of Anxiety

Anxiety is defined as a feeling of uneasiness about a subjective situation that a person is experiencing in the moment and whose future occurrence is uncertain or will not occur. Individuals can use defense mechanisms by ignoring and rejecting situations that cause them pain (Erskine, 2018). Anxiety is divided into two: state and trait anxiety (Takhdat et al., 2024).

State Anxiety: State anxiety is defined as a temporary anxiety reaction given in situations that may cause anxiety (Leal et al., 2017). It can also be expressed as the individual's psychological reactions, provided that the intensity of occurrence is not frequent and continuous. State anxiety can vary from event to event. Examples include birth anxiety, childbearing anxiety, or daily life anxiety (Cruise, et al., 1985).

State anxiety can result from the person's perception of the situation they are in as a threat. This situation creates an unpleasant emotional state in the person. This emotional state can be perceived, understood, and felt.

Trait Anxiety: Trait anxiety is the increasing frequency and intensity of reactions to situations that cause stress or that the individual perceives as dangerous. Individuals with high levels of trait anxiety experience stressful or anxiety-provoking events more intensely than those with low levels. Trait anxiety has the following characteristics (Spielberger and Reheiser, 2009):

- It continues for a long time in the individual
- It is continuous
- The duration and intensity of anxiety may vary from person to person
- The psychological discomfort that the individual has may affect the level of trait anxiety
- Individuals' psychological differences may affect the evaluation process of events perceived as dangerous and threatening.

Effects of Anxiety on the Individual

Anxiety is one of the most common psychological problems in the world (Rapee et al., 2023). It is mostly desired and expected for anxiety to be experienced mildly and normally. When there is no anxiety to a certain extent, the person may lack motivation. However, excessive anxiety can cause emotional harm to the individual (Öz, 2017).

It is stated that 301 million people from all age groups have anxiety disorders and the rate of anxiety during adolescence is 12.9% (WHO, 2022). In a study conducted with 917

high school students in Turkey, it was determined that 75% of the participants had anxiety disorders (Özakar Akça et al., 2018). According to a study conducted in the USA in 2012, 34.1% of high school students had anxiety disorder symptoms, while in 2018, 44% of the participants had anxiety disorder symptoms (Parodi et al., 2022).

The anxiety and expectation that emerges in children and adolescents who experience a major earthquake can cause negative reactions such as anxiety. Studies have shown that children and adolescents exposed to natural disasters have high anxiety levels after the event and even for many years (Lai et al., 2015; Shi et al., 2016).

It has been observed that anxiety in adolescents can cause different psychological problems in the future (Tang et al., 2020). It has been stated that anxiety disorder in adolescence is associated with psychological problems such as depression (Melton et al., 2016) and some technology addictions (Li et al., 2019; Yang et al., 2019). Therefore, the symptoms of anxiety disorders can continue for a long time in the person's life (Lau, 2022).

Earthquakes can cause persistent anxiety in individuals and societies (Hayes, 2011). Individuals with high trait anxiety levels have weak cognitive flexibility. These individuals are sensitive to stimuli that may cause anxiety and have difficulty responding harmoniously (Wang et al., 2018). They tend to focus on negativity against stimuli that may cause anxiety. They show relatively high physiological responses to anxious situations (Knowles and Olatunji, 2020). It can be said that anxiety causes significant negative effects on individuals in cognitive, emotional and behavioral dimensions. It is thought that current studies are needed in this area since the desired level of success has not been achieved despite the fight against smoking in Turkey. Based on the gap in the literature on the subject, this study aims to evaluate the state-trait anxiety states of university students who are smokers and who were exposed to the Elazığ Sivrice earthquake on January 24, 2020 at 20:55 local time. It is anticipated that the data obtained from this study, which examines the anxiety states of the students, will be useful in the development of effective stress coping methods due to the fact that Turkey is located in the earthquake zone and smoking is increasing among young people.

The hypothesis of this study is stated below:

H1: State-traıt anxıety levels of students who smoke while preparing for the university exam may be affected during the earthquake.

MATERIALS AND METHODS

Purpose and Type of Research

This research is a descriptive and correlational research methodology in quantitative research methodology. The state-trait anxiety levels of smoking university students who were exposed to the Elazığ Sivrice earthquake at 20:55 local time on January 24, 2020 were evaluated.

Population and Sample of the Research

The universe of the study consisted of smokers preparing for university who experienced the earthquake with the epicenter in Elazığ Sivrice at 20:55 local time on January 24, 2020; the sample consisted of 130 people who agreed to participate in the study.

Data Collection Tool

The data of the study was collected with the "Individual Information Form and State-Trait Anxiety Inventory (STAI I-II)". Before the application, the participants were interviewed face to face and the purpose of the study was explained. The data of the study was obtained using the questionnaire form and scale after obtaining consent from the individuals who agreed to participate in the study. The data was collected face to face and online method (online form) considering the working conditions in line with the demands of the individuals.

Individual Information Form: The Individual Information Form is a form prepared by researchers and is used to obtain personal information about the participants. This form includes information on smoking status, number of cigarettes smoked daily, reason for starting smoking, presence of smokers in the family, awareness of the effects of smoking on health, education, employment and socioeconomic status of the participants' parents, and the number of times they have taken the university entrance exam.

State-Trait Anxiety Scale: The State-Trait Anxiety Scale, developed by Spielberger et al. (1970), was adapted to Turkish by Öner and Le Compte (1983). According to this scale, if more than three statements are not answered, the completed form is considered invalid and is not scored. Scoring in the State Anxiety Scale is 1=Never, 2=A Little, 3=A Lot, and 4=Completely; scoring in the Trait Anxiety Scale is 1=Almost never, 2=Sometimes, 3=A Lot, and 4=Almost always. There are 40 questions in total in the State-Trait Anxiety Scale. The scores obtained from both scales theoretically vary between 20 and 80. A high score indicates a high level of anxiety, a low score indicates a low level of anxiety. The internal reliability total (Cronbach's alpha) values of the Trait Anxiety Scale vary between 0.83-0.87, and for

state anxiety behavior it is between 0.94-0.96 (Spielberger et al., 1970; Oner and Compte, 1985). With these improvements, Cronbach's alpha numbers change to 0.81 for State Anxiety and 0.68 for Trait Anxiety.

Statistical Analysis

The data of the study were analyzed with the Statistical for Social Science for Windows 25 (SPSS, Version 25; Armonk, NY: IBM Corp. 2017) program. In the normality distribution tests, it was seen that the Skewness and Kurtosis values were less than 1 and the data were found to be normally distributed. In the analysis of the data, descriptive statistics such as number, percentage, mean, standard deviation, minimum, maximum, independent sample T test, One-way ANOVA test, Pearson correlation test and simple regression test were used. The statistical significance level was accepted as $p<0.05$.

Ethics Approval

This study was conducted in accordance with the decision of Balıkesir Atatürk City Hospital Non-Interventional Clinical Research Ethics Committee dated 29.02.2024 and numbered 2024/01/1 and in accordance with the Helsinki protocol.

RESULTS

Table 1 compares the sociodemographic characteristics of the participants and the effects of these characteristics on their anxiety levels. It was determined that 58.5% of the participants were female; 73.1% of their mothers were illiterate; 45.4% were taking the exam for the second time; 96.2% of their mothers were unemployed; 13.8% had more income than expenses and 41.5% took the exam from the equal weight area. The state anxiety levels of the participants were found to be significantly higher in males ($p=0.008$). Trait anxiety was found to be statistically significantly higher in females and in those whose fathers had a high school or higher education ($p<0.05$). No significant relationship was found between other sociodemographic characteristics and anxiety levels ($p>0.05$).

Table 1. Comparison of State-Trait Anxiety Levels of Participants According to Their Sociodemographic Characteristics

				State Anxiety	Constant Anxiety
Sociodemographic Characteristics		**n**	**%**	**x̄ ±SD**	**x̄ ±SD**
Gender	Female	76	58.5	40.32±5.21	48.11±6.60
	Male	54	41.5	43.03±6.12	43.83±6.56
				p=0.008 t=-2.714	**p=0.001** t=3.657
Mother's Education Status	Illiterate	95	73.1	41.31±5.96	45.86±7.12
	Literate	11	8.5	41.18±6.61	45.81±4.23
	Primary school graduate	18	13.8	41.94±4.89	48.50±7.59
	Secondary school graduate	6	4.6	42.66±3.32	48.33±6.89
				p=0.925 F=0.156	p=0.430 F=0.927
Father's Education Status	Illiterate	16	12.3	42.31±6.73	44.75±10.36
	Literate	18	13.8	42.00±4.91	44.44±4.23
	Primary school graduate	66	50.8	40.86±5.37	45.80±6.21
	Secondary school graduate	22	16.9	40.45±6.11	48.68±6.27
	High school and above	8	6.2	46.12±6.15	51.75±7.47
				p=0.125 F=1.840	**p=0.036** F=2.649
YGS Entry Number	First time entering	41	31.5	40.14±4.57	46.90±6.20
	Second time entering	59	45.4	42.20±6.12	46.05±7.83
	More than twice entering	30	23.1	41.76±6.25	46.13±5.89
				p=0.201 F=1.625	p=0.819 F=0.199
Does Mother Work?	Yes	5	3.8	43.20±3.27	50.00±5.43
	No	125	96.2	41.38±5.81	46.19±6.92
				p=0.490 t=0.692	p=0.227 t=1.214
Does Father Work?	Yes	92	70.8	40.97±5.87	46.04±6.69
	No	38	29.2	42.62±5.39	47.08±7.48
				p=0.144 t=-1.471	p=0.443 t=-0.769
Family Income Status	Income-expense equal	56	43.1	41.55±5.63	45.10±6.50
	Income-expense more	18	13.8	41.77±5.57	46.94±8.61
	Income-expense less	56	43.1	41.25±5.99	47.37±6.59
				p=0.931 F=0.071	p=0.204 F=1.611
Parents' Attitude	Democratic	38	29.2	40.81±6.13	46.15±5.95
	Authoritarian	23	17.7	39.82±5.82	45.34±5.01
	Protective	60	46.2	42.46±5.60	47.13±7.62
	Indifferent	9	6.9	41.55±4.00	44.33±9.57
				p=0.244 F=1.408	p=0.244 F=0.682
Exam Area	Numerical	25	19.2	41.44±4.42	45.56±6.29
	Verbal	51	39.2	42.33±6.68	47.35±7.95
	Equal Weight	54	41.5	40.62±5.27	45.74±6.03
				p=0.318 F=1.157	p=0.404 F=0.914

(p= .005; p<.05)

Table 2 examines the effects of participants' attitudes towards smoking on state-trait anxiety levels. It was determined that 86.2% of the participants smoked; half of the smokers smoked eleven or more cigarettes per day; 44.4% started smoking due to the influence of friends; 38.6% said their families did not smoke; and 45.4% said smoking caused lung diseases and respiratory distress. It was determined that there was no statistically significant relationship between attitudes towards smoking and state anxiety scores ($p>0.05$). Although the state anxiety levels of those whose parents smoked were higher than the other groups, it was not statistically significant. It was found that those who had no idea about the effects of smoking on health had significantly higher trait anxiety levels than the others ($p=0.017$).

Table 2. Comparison of the Effects of Participants' Attitudes Towards Smoking on State-Trait Anxiety Levels

				State Anxiety	Constant Anxiety
Attitudes Towards Smoking		**n**	**%**	**$\bar{x}$ ±SD**	**$\bar{x}$ ±SD**
Smoking	Yes	18	13.8	42.88±7.48	40.22±8.62
	No	112	86.2	41.22±5.42	47.32±6.06
				p=0.255 t=1.143	p=0.001 t=-4.325
Number of Cigarettes Smoked Daily	10 pieces per day and below	9	50.0	42.11±7.80	37.44±9.13
	11 pieces per day and above	9	50.0	43.66±7.53	43.00±7.56
Reasons for Starting Smoking	Peer influence	8	44.4	44.62±8.03	38.75±12.39
	Other (boredom etc.)	10	55.6	41.50±7.12	41.40±4.19
				p=0.395 t=0.874	p=0.534 t=0.049
Smokers in the Family	Only father	48	36.9	42.41±5.82	45.97±7.26
	Only mother	5	3.8	40.00±4.94	43.00±9.19
	Mother and father	5	3.8	43.60±6.22	51.80±4.32
	Sibling	22	16.9	40.54±7.20	47.00±8.03
	No one uses	50	38.6	40.86±4.95	46.18±5.81
				p=0.491 F=0.859	p=0.325 F=1.174
What are the Health Effects of Smoking?	Causes cancer	18	13.8	42.11±4.12	47.11±5.01
	Causes lung diseases and respiratory distress	59	45.4	40.94±6.25	44.79±7.12
	Causes heart disease	17	13.1	41.17±4.74	45.11±7.90
	No idea	36	27.7	42.22±6.11	49.25±6.10
				p=0.720 F=0.447	**p=0.017** F=3.507

(p= .005; p<.05)

The mean scores of the state anxiety and trait anxiety scales and the correlation analysis between them are presented in Table 3. The mean state anxiety score was found to be 41.25±5.74 and the mean trait anxiety score was found to be 46.33±6.89. It is seen that there is a low level positive significant relationship between state anxiety and trait anxiety (r=0.179, p=0.042).

Table 3. Correlation between State Anxiety Scale and Trait Anxiety Scale Scores

	Correlation Matrix		**Scale Total Score**	
	State Anxiety	**Constant Anxiety**	**Min- Max**	**$\bar{x}$ ±SD**
State Anxiety	1	r=0.179 **p=0.042**	26.00-56.00	41.45±5.74
Constant Anxiety	r=0.179 **p=0.042**	1	16.00-67.00	46.33±6.89

(p= .005; p<.05)

In order to determine the effect of state anxiety level on trait anxiety level, simple linear regression analysis was performed and it was determined that the model established for this purpose was significant (F=4.225, p=0.042). The R2 value, which is the explanatory power of the model, was determined as 0.032. According to these results, it can be stated that 0.032% of the trait anxiety variable is explained by the state anxiety variable, which is the independent variable in the model (Table 4).

Table 4. Regression Analysis of State Anxiety Scale and Trait Anxiety Scale Scores

Predicted Variable	**Predictor Variable**	**B**	**SD**	**β**	**t**	**R**	**R^2**	**F**	**Model p**
State Anxiety	**Constant**	34.551	3.395		10.178	0.179	0.032	4.225	**0.042**
	Constant Anxiety	0.149	0.072	0.179	2.056				

(p= .005; p<.05)

DISCUSSION

In this section, the findings of the research conducted to examine the state-trait anxiety levels of students who were preparing for the university exam and were smoking during the earthquake whose epicenter was Elazığ Sivrice on January 24, 2020 at 20.55 local time were discussed. The effects of sociodemographic variables and smoking on state-trait anxiety were examined. The findings obtained as a result of the analyzes carried out based on the hypotheses of the research were discussed in the light of the studies in the literature.

Analysis of Findings Regarding State-Trait Anxiety Levels of Participants According to Their Sociodemographic Characteristics

It is stated that some demographic factors such as gender, geographical region, residence of parents, occupation of father, family members, occupational status and general satisfaction may affect cigarette consumption (Oktay et al., 2013).

Examination of Findings Regarding State-Trait Anxiety Levels According to Gender Factor

In a study investigating the factors affecting the smoking behaviors of medical and dentistry faculty students, it was determined that being male was among the factors that led students to smoke (Kara et al., 2011). Hoerster (2012) examined the smoking behaviors of students studying at a university and concluded that men smoked more than women. In addition, in this study, it was determined that students who did not live with their families had a higher rate of smoking. In a study investigating anxiety and depression in individuals who experienced an earthquake, it was found that men had higher trait anxiety levels (Miral et al., 1998). A total of 130 people, 76 (58.5) women and 54 (41.5) men, participated in our study conducted to examine the state-trait anxiety levels of students who smoked while preparing for the university entrance exam during the earthquake. It was determined that the state anxiety levels of the participants were significantly higher in men ($p=0.008$). The loss of resources needed to sustain life due to the earthquake, individual differences and the differences in meanings attributed to events may have caused this situation. There are studies reporting that state and/or trait anxiety scores are higher in women than in men (Agun et al., 1993; Dönmez et al., 1996). In different studies, it has been found that female students are more anxious than male students (Keklik, 2011; Deveci et al., 2012; Dursun and Aytaç, 2012; Basco and Olea, 2013; Yılmaz et al., 2014). It is stated that the reason for the prevalence in women is because smoking starts in childhood and increases as the developmental process progresses (Rapee et

al., 2009). Some studies have found that women are at higher risk of experiencing anxiety and depressive disorders (McLean and Anderson, 2009; Parker and Brotchie, 2010; Costello et al., 2011; Schuch et al., 2014). Thus, it has been stated that people may have higher anxiety levels due to feeling exhausted (Otacıoğlu, 2008). Our study data show that trait anxiety is higher in women ($p<0.05$). It is thought that genetic and biological factors play a role in the emergence of this difference (Zhou et al., 2013). In this study, the high trait anxiety level of women may be due to the effects of biopsychosocial differences, gender roles, hormonal changes being felt more intensely, the belief that women live under relative pressure in society, their inability to use their coping skills effectively, the individual having an anxiety disorder before the earthquake, women being more exposed to the devastating effects of the earthquake and internalizing their anxiety instead of expressing it. There is a need for research that reveals the effect of gender on smoking in individuals who experienced an earthquake.

Examination of Findings Regarding State-Trait Anxiety Levels According to Parents' Education Level

A study conducted to examine the smoking behaviors of university students found that the mother's illiteracy affected the smoking behavior of their children (Özcebe et al., 2014). Yurt Öncel et al. (2011), in their study aiming to determine the risk factors for smoking in university students, determined that the mother's education level had a significant effect on the smoking behavior of children.

Although there are studies indicating that there is no significant relationship between the education level of parents and the anxiety levels of children (Doğan and Çoban, 2009; Tekindal et al., 2010), it is also stated that the trait anxiety level in children decreases as the mother's education level increases (Erdik and Altıparmak, 2012). In our study findings, anxiety levels were found to be statistically significantly higher in those whose fathers' education level was high school and above ($p<0.05$). This situation may be caused by the relatively high earthquake awareness of the fathers of the participants, and the expectation of an aftershock and the chronic effect of this expectation. In addition, Nolen-Hoeksema and Morrow (1991) stated in their study that pre-earthquake mental illness symptoms are an indicator of post-earthquake PTSD. Therefore, individuals having a chronic or psychiatric illness before may cause anxiety and post-traumatic stress. Since our study did not provide data on individuals' anxiety and post-traumatic stress symptoms before the earthquake, the presence of previous chronic and psychiatric illnesses may have also caused this situation.

Examination of Findings Regarding State-Trait Anxiety Levels According to Income Status

It is stated that income level affects smoking status (Çalışkan, 2015) and that perceiving one's income level as low increases the risk of smoking (Siahpush et al., 2006). Deveci et al. (2010) examined the factors affecting the smoking behavior of students studying at a university and stated that the parents of students who smoke have higher incomes. In some studies investigating the frequency of smoking according to where individuals live, it was found that those with low income levels and living in disadvantaged areas smoke more (Priebe et al., 2009; Nelson et al., 2011).

Our data show that 96.2% of the participants' mothers did not work, 29.2% did not work, and 43.1% had incomes less than expenses. The fact that the socioeconomic status and the state-trait anxiety levels were significantly high in male and female students can be explained by the fact that the students' needs cannot be met or they have difficulty in meeting them, they have to continue their lives in the house where they experienced the earthquake due to financial difficulties, and they cannot use their coping mechanisms effectively because they are relatively more affected by economic losses.

Examining the Findings Regarding the Effect of Participants' Attitudes Towards Smoking on Anxiety Levels

It is stated that individuals may develop automatic negative thinking after disasters such as earthquakes and use smoking as a tool to cope with this situation (Kleinke et al., 1983). There are many studies showing that anxiety is related to smoking (Zvolensky et al., 2003; Breslau et al., 2004; Goodwin et al., 2005). It is reported that university students who smoke have higher trait anxiety scale scores (Comeau et al., 2001; Wiggert et al., 2016). Studies focusing on the effect of smoking on anxiety show that people's emotions return to normal during smoking, but there are deviations from normal in emotions when they do not smoke (Parrott, 1999).

Studies have reported that post-traumatic stress disorder (PTSD) and other psychiatric problems occur at high rates in children and adolescents after an earthquake. After the Northridge earthquake, 28.6% of children developed mild to moderate PTSD (Asarnow et al., 1999); after the Wenchuan earthquake in China, 1.3% of high school students had PTSD symptoms (Zhang et al., 2012); after the earthquake in Haiti in 2010, the prevalence of PTSD and depression in children and adolescents was 36.9% and 46.2% (Cenat and Derivois, 2015); and after the earthquake in Nepal in 2015, 43.3% of adolescents developed probable PTSD

and 38.1% developed probable depression (Sharma and Kar, 2019). In a study conducted with individuals who applied to a Medical Faculty Child Psychiatry Polyclinic after the 1999 Marmara earthquake, it was observed that psychological problems such as communication and elimination disorders were experienced (Berkem and Bildik, 2001).

Our data show that those who had no idea about the effects of smoking on health had significantly higher trait anxiety levels. Depressive moods may have developed in students preparing for university after the earthquake. Therefore, our study findings can be considered as students perceiving smoking as a reward mechanism that reduces trait anxiety and using it as a coping method and experiencing problems in the communication process after the earthquake.

Since no previous research has been conducted on the subject, it is thought that it is important to conduct research to evaluate the state-trait anxiety states of individuals who smoked after the earthquake.

CONCLUSION AND RECOMMODATIONS

As a result, in our study, where it was determined that some descriptive data differences may have an effect on the state-trait anxiety levels of individuals preparing for university who smoke, we think that preventive activities for smoking may be important. Therefore, according to the findings of our research, we think that conducting different studies and implementing the following measures may be useful in solving smoking:

Within the scope of preventive activities, using a larger sample to determine the state-trait anxiety states of individuals who smoke and have experienced an earthquake with the variables included in our individual information form,

It has been stated that people with alcohol and substance use disorders experience unpleasant emotions such as stress, fear and anger more and tend to use substances to cope with these negative situations (Carpenter et al., 2020). It is stated that interventions to support appropriate coping skills of individuals who have experienced an earthquake should be planned in a way that covers the mental well-being of individuals in line with certain goals,

It is stated that quality sleep, balanced nutrition, avoiding alcohol and substance use, providing physical activity, talking to others about the causes of stress and keeping a diary are effective in reducing stress for individuals who have experienced an earthquake (Babaie et al., 2021; Dakhil et al., 2023). Therefore, health professionals should organize appropriate psychosocial support programs for individuals who have experienced an earthquake to cope

with stress, and the efficiency level of these programs and the feasibility of the targeted situation should be monitored,

Multifaceted, qualitative studies can be conducted in order to offer solutions to smoking. Qualitative studies should examine in detail the effects of different ages, income and education levels, some cultural and social characteristics, and individuals' individual and family situations on determining the factors that cause anxiety and on the use of coping mechanisms for anxiety,

In order to prevent social learning in smoking, appropriate policies should be developed to prevent smoking in places where children are present and to increase smoke-free air spaces,

In some studies conducted after the September 11 events in the United States, it was stated that there was a significant relationship between individuals' television viewing status and anxiety and PTSD symptoms, and that PTSD increased in those who watched these broadcasts (Otto et al., 2007; Bernstein et al., 2007). Therefore, considering that inappropriate news content can affect children and adolescents, parents should check the content their children watch on news channels and social media after the earthquake,

Research Statement

Ethical Aproval: Balıkesir Atatürk City Hospital Non-Interventional Clinical Research Ethics Committee dated 29.02.2024 and numbered 2024/01/1

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