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EVALUATING THE RELATIONSHIP BETWEEN ADULT'S CLIMATE CHANGE ANXIETY LEVELS AND ECOLOGICAL LIFE APPROACH FROM AN ENVIRONMENTAL EDUCATION PERSPECTIVE

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ABSTRACT
In the present study, the purpose was to determine the worry levels of adults about climate change and the determinants of ecological life attitudes and to investigate the association between anxiety levels about climate change and ecological life attitudes. This descriptive study was conducted between April and May 2022 as an e-questionnaire with 588 volunteering adults who were aged 18 and over living in Turkey. The data were collected with Personal Information Form, Ecological Life Attitude (ELA) Scale, and Climate Change Worry (CCW) Scale. The mean age of the participants was found to be 30.47±11.14 (Range: 18-74) and 52.0% were women. Climate change anxiety levels and feelings of helplessness about climate change were found to be higher among women and those living in rural areas. Ecological life attitude scores were determinant in the egocentrism dimension at age, occupation, and perceived income level; in the pesticide dimension, at gender, age, education level, and occupation level; in the consumption dimension, at age, occupation, perceived income level; in the biodiversity dimension, at gender, education, occupation and perceived income level. According to the multivariate linear regression analysis and some variables, it was determined that as the feeling of helplessness among the sub-dimensions of the CCW scale increased, the attitudes toward egocentrism decreased and the attitudes toward biological diversity increased, as the feeling of helplessness increased in the adjusted model according. It was found that as the anxiety levels of the sub-dimensions of the CCW scale increased, the scores of the attitudes towards the use and consumption of pesticides in ecological life, which were the sub-dimensions of the ELA scale, increased.

Keywords: Education enviroment, climate change worry, climate change, ecological life attitude.

INTRODUCTION

Anthropogenic climate change causes extreme weather and climate activities in every region of the world. According to the 2021 Intergovernmental Panel on Climate Change (IPCC) report, some developments have now reached the "irreversible" level. It was underlined in the report that was prepared by 234 scientists from 66 countries that the climate changed as a result of human activities and these activities increased global warming to an unprecedented level over the last 2 thousand years; however, IPCC experts reported that there is still opportunity to limit climate change (IPCC, Intergovernmental Panel on Climate Change, 2021). The spread of ecological behaviors, which are expressed as individuals' postponing certain desires and needs for the protection of the environment, or giving up these wishes and needs by sacrificing some costs (Sargın & Akdoğan, 2022), is the most important solution in reducing the problems caused by climate change. Based on this, it is hypothesized that the awareness of the alarming facts about current and possible conditions regarding climate change, as well as other environmental problems, will shape the ecological life style positively (Korkmaz, Atay & Yıldırım, 2017). While the protection of biological diversity, use of pesticides, and sustainability of people's consumption habits and attitudes, which make up the dimensions of ecological life, have important roles in reducing the rate of climate change, it is no doubt that individuals who have "egocentric" ideas will increase this speed. Because it is possible to ignore nature and living things and to show only a utilitarian approach to them in "egocentric" thinking (Onel & Yüce, 2018). In parallel with the increased egocentric lifestyle, ecological collapse is accelerating, especially the severity of climate change is increasing. In fact, human activities lead to the release of 40 billion tons of carbon dioxide each year, and therefore, there are many reasons such as forest fires, melting of glaciers, drying of closed lakes, decrease in many plant and animal species, spread of invasive flora and fauna species, increase in coastal erosion and extreme weather events and similar undesirable situations occur. Various studies are conducted on the perceptions of individuals regarding this and similar global environmental issues (Weber, 2010; Arcanjo, 2005). In the study that sought an answer to the question "What are the variables that shape individuals' perceptions of climate change?" conducted by Weber (2010), it was reported that individuals consider climate change as a very important issue and this situation differed from one country to another. As an example of this differentiation, in the study conducted by Arcanjo, especially the groups that have high eco-anxiety are the indigenous groups among the Inuit and Sami populations. These groups are generally dependent on land, sea and Arctic ice to maintain their traditional lives, and therefore, the changing climate affects these groups more.[6] In a similar study, the adaptation processes to climate change still remain uncertain in society, and this has significant effects on public health (Abbass et al., 2022; Wheeler & Watts, 2018).

Although the severity, frequency, and types of natural disasters increasing because of climate change vary according to the region, short and long-term health consequences are deepened by inequalities (Smith et al., 2022; Cianconi et al., 2020). Among the long-term effects of climate change on psychological health, there are psychological distress and stress, aggression and violence, and ecological grief effects (Cankardaş & Sofuoğlu

2021). In a study that was conducted previously, it was reported that 70% of Americans felt “anxious” about the climate and 59% felt “helpless” (Arcanjo, 2005).

According to Panu (2020), although ecoanxiety and climate worries are discussed widely in the media, there is a lack of study on these issues. Similarly, the number of studies conducted on the subject in Turkey is insufficient. However, no studies were found revealing the relationship between the levels of worry about climate change and ecological life attitudes. Considering the findings that changes in worries and responsibilities affect climate-friendly behaviors (Jakučionytė-Skodienė & Liobikienė, 2022). As one of the components of climate policies, knowing how climate-friendly behavior changes are shaped by the level of anxiety on this issue makes us think that it will also shape the policies to be formed in this area.

Since the last quarter of the 20th century, efforts to improve environmental awareness have been more on the agenda all over the world. While many organizations such as the European Union, especially the United Nations, question the consumption and production activities of today's consumers and producers, which cause environmental disasters, they accelerated environmental education studies for individuals to increase sustainability. In Turkey, similar studies have intensified especially since the 1980s. It is expected that the awareness of today's adults about environmental problems, especially climate change, will increase. For these reasons, the purpose was to determine the worry levels of adults about climate change and the determinants of ecological life attitudes and to investigate the relationship between worry levels about climate change and ecological life attitudes.

METHOD

Study Design

This descriptive study was conducted in Turkey between April and May 2022 online through social media. The population of the study consisted of adults who were aged 18 and over living in Turkey. For Multivariate Linear Regression Analysis, the minimum sample dimension was calculated as 485 with α=0.05 and 80% power according to an effect dimension of 0.02 in the G*Power 3.1.9.4 program[14] and 588 adults who were aged 18 and over who volunteered to participate in the study were reached.

Data Collection

The data were applied online through social media and the Google Questionnaire Form. As the first question of the questionnaire, the participants were asked to confirm that they participated in the study voluntarily, and those who approved were allowed to answer the questionnaire. The data were collected with the Personal Information Form, Ecological Life Attitude Scale, and Climate Change Worry Scale.

Personal Information Form

This form, which was prepared by the researchers, consisted of information on gender, age, education level, occupation, place of residence, and perceived income.

Ecological Life Attitude Scale

The Ecological Life Attitudes (ELA) Scale was developed by Onel and Yuce (2018) to determine the attitudes toward ecological life and consists of 19 items and 4 sub-dimensions; egocentrism, pesticides, consumption, and biological diversity.[4] Decreased egocentrism scores, increased pesticides, and consumption and biological diversity scores reflect positive attitudes towards ecological life. Onel and Yuce (2018) found that Cronbach's Alpha coefficient for the overall dimension was 0.76.[4] In this study, egocentrism, pesticide, consumption, and biological diversity were calculated to be 0.71, 0.71, 0.79, and 0.72, respectively.

Climate Change Worry Scale

The Climate Change Worry (CCW) Scale that was developed by Stewart was adapted into Turkish by Gezer & İlhan (2021). The scale consists of 10 items and two sub-dimensions; Anxiety and Feeling of helplessness. High scores reflect increased anxiety and feelings of helplessness about climate change. In the study of Gezer and Ilhan (2021), Cronbach's Alpha coefficients of the sub-dimensions of anxiety and feeling of helplessness were found to be 0.87 and 0.83, respectively. In this study, it was calculated as 0.83, and 0.71 respectively.

Study Analysis

Descriptive tests, number (n), percentage (%), mean and standard deviation (SD) were used in the analysis. Reliability analysis was performed for the reliability of the data, and the results were evaluated with Cronbach's Alpha coefficient. The normality of the distribution was tested with the Kolmogorov-Smirnov Test. For data that showed nonparametric distribution, Mann-Whitney U-Test was used to compare the means of two independent groups, and the Kruskal-Wallis Analysis of Variance was used to compare the means of three or more independent groups. The relationship between two continuous variables was investigated by Spearman Correlation Analysis. The Multivariate Linear Regression Analysis was performed for further analysis. Continuous variables were included in the model with the **z**-transformation, and models adjusted for gender, age, education level, occupation, and perceived income were created. The descriptiveness of the models is shown by the Adjusted R-Square (Adj. R^2) and 7.5%-12.0% of the variances could be explained in the adjusted model. The data were analyzed in the SPSS 26.0 statistical package program. The significance level was taken as $p<0.05$.

FINDINGS

Table 1. Distribution of Participants' Sociodemographic Characteristics

	n	%
Gender		
Woman	306	52,0
Man	282	48,0
Age		
< 25	237	40,3
25-34	186	31,6
≥ 35	165	28,1
Education level		
High school and below	144	24,5
Undergraduate and above	444	75,5
Occupation level		
White-collar	248	42,2
Blue-collar	147	25,0
Other (Unemployed, student, retired, housewife)	193	32,8
Place of residence		
Urban	261	44,4
Rural	327	55,6
Perceived income level		
Good	94	16,0
Modarate	430	73,1
Bad	64	10,9

The descriptive characteristics of the participants are given in Table 1. A total of 40.3% of the study group were under the age of 25 (Mean±SD: 30.47±11.14, Range: 18-74), 52.0% were female, 75.5% had a university education or higher, 42.2% of the group was white-collar employees, 55.6% lived in rural areas, and 73.1% perceived their income as sufficient.

Table 2. Distribution of the Descriptive Characteristics of the Participants According to the Sub-dimension Mean Scores of the CCW Scale (n=630)

	Anxiety		**Feeling of helplessness**	
	Mean ± SD	**Mean rank**	**Mean ± SD**	**Mean rank**
Gender				
Woman	26,28±4,66	320,45	11,38±2,24	315,92
Man	25,04±4,09	266,34	10,84±2,03	271,26
z	*-3,232*		*-3,818*	
p	*0,001***		*0,000****	
Age				
< 25	25,55±4,14	286,33	11,07±2,07	286,60
≥ 25	25,78±4,63	300,02	11,16±2,21	299,83
z	*-0,961*		*-0,940*	
p	*0,336*		*0,347*	
Education level				
High school and below	25,56±3,99	284,89	11,05±1,89	283,99
Undergraduate and above	25,73±4,58	297,62	11,15±2,24	297,91
z	*-0,784*		*-0,867*	
p	*0,433*		*0,386*	
Occupation level				
White-collar	25,56±4,78	291,97	11,07±2,33	294,30
Blue-collar	25,64±4,00	286,83	11,10±1,92	283,63
Other	25,89±4,30	303,59	11,20±2,09	303,04
χ^2	*0,913*		*1,123*	
p	*0,634*		*0,570*	

Place of residence				
Urban	25,44±4,26	284,33	10,93±2,08	277,52
Rural	25,89±4,57	302,62	11,28±2,20	308,06
z	*-1,302*		*-2,198*	
p	*0,193*		*0,028**	
Perceived income level				
Good	25,87±4,74	311,38	10,97±2,49	297,03
Modarate	25,72±4,29	293,98	11,18±2,05	295,92
Bad	25,22±4,99	273,21	10,94±2,33	281,23
χ^2	*1,950*		*0,454*	
p	*0,377*		*0,797*	

*p<0.05, **p<0.01, ***p<0.001.

Table 2 shows the distribution of the descriptive characteristics of the participants according to the sub-dimension mean scores of the CCW Scale. A statistically significant relationship was found between anxiety and gender (p=0.001), which is one of the sub-dimensions of the CCW Scale, and between the feeling of helplessness and gender (p=0.000) and place of residence (p=0.028). No significant differences were detected between anxiety and age group, educational status, occupation, place of residence, and perceived income levels (p>0.05). There were no significant differences between the feeling of helplessness, which is one of the sub-dimensions of the CCW Scale, and age group, education level, occupation, and perceived income level (p>0.05).

Table 3. Distribution of the Descriptive Characteristics of the Participants According to the Sub-dimension Mean Scores of the ELA Scale (n=630)

	Egocentrism		**Pesticide**		**Consumption**		**Biological diversity**	
	Mean ± SD	**Mean rank**	**Mean ± SD**	**Mean rank**	**Mean ± SD**	**Mean rank**	**Mean ± SD**	**Mean rank**
Gender								
Woman	6,36±2,59	301,16	10,07±2,46	310,68	30,44±4,28	282,92	22,11±2,91	324,91
Man	6,22±2,79	287,28	9,55±2,68	276,94	30,78±4,84	307,07	21,23±2,73	261,51
z	*-0,998*		*-2,422*		*-1,727*		*-4,562*	
p	*0,318*		*0,015*		*0,084*		*0,000****	
Age								
< 25	7,16±2,52	355,32	9,30±2,24	258,59	29,70±4,19	253,73	21,52±3,06	288,65
≥ 25	5,70±2,63	253,43	10,17±2,73	318,75	31,22±4,70	322,03	21,80±2,71	298,45
z	*-7,197*		*-4,241*		*-4,794*		*-0,693*	
p	*0,000****		*0,000****		*0,000****		*0,488*	
Education level								
High school and below	6,48±2,84	303,59	9,29±2,69	265,30	30,75±5,09	305,33	20,99±2,63	243,12
Undergraduate and above	6,23±2,63	291,55	9,99±2,52	303,97	30,56±4,38	290,99	21,91±2,89	311,16
z	*-0,745*		*-2,389*		*-0,883*		*-4,215*	
p	*0,456*		*0,017**		*0,377*		*0,000****	
Occupation level								
White-collar	5,76±2,54	260,13	10,36±2,57	328,05	30,85±4,70	304,63	22,12±2,83	324,81
Blue-collar	5,93±2,71	267,72	9,47±2,86	277,24	31,66±4,60	339,78	21,08±2,69	250,17

Other	7,26±2,60	359,06	9,39±2,22	264,54	29,48±4,11	246,99	21,60±2,93	289,32
χ^2	*42,410*		*17,423*		*26,560*		*18,413*	
p	*0,000****		*0,000****		*0,000****		*0,000****	
Place of residence								
Urban	6,33±2,69	297,00	9,84±2,42	295,45	30,45±4,23	284,69	21,76±2,91	300,96
Rural	6,27±2,68	292,50	9,80±2,70	293,74	30,73±4,81	302,33	21,63±2,81	289,34
z	*-0,322*		*-0,122*		*-1,255*		*-0,831*	
p	*0,748*		*0,903*		*0,210*		*0,406*	
Perceived income level								
Good	5,63±2,64	247,78	9,70±2,70	284,60	31,38±4,70	327,51	22,33±2,39	330,15
Modarate	6,18±2,59	288,73	9,91±2,53	301,54	30,58±4,53	293,87	21,64±2,91	292,18
Bad	8,02±2,69	401,87	9,36±2,71	261,73	29,66±4,41	250,27	21,09±3,01	257,75
χ^2	*33,754*		*3,486*		*7,935*		*7,347*	
p	*0,000****		*0,175*		*0,019**		*0,025**	

*p<0.05, **p<0.01, ***p<0.001.

Table 3 gives the distribution of the descriptive characteristics of the participants according to the sub-dimension mean scores of the ELA Scale. Statistically significant relations were found between the sub-dimensions of the ELA Scale, egocentrism and age, occupation and perceived income (p<0.001); between pesticide sub-dimension and gender, age, education level and occupation (p<0.05); between consumption sub-dimension and age, occupation and perceived income (p<0.05); biological diversity sub-dimension and gender, educational status, occupation, and perceived income (p<0.05). No significant differences were found between the sub-dimensions of the ELA Scale, egocentrism and gender, educational status, place of residence; between pesticide and place of residence and perceived income; between consumption and gender, educational status, place of residence; and biodiversity, age, and place of residence (p>0.05).

Table 4. Relationship between ELA Scale and CCW Scale

		Egocentrism	Pesticide	Consumption	Biological diversity
Anxiety	r	-0,200	0,184	0,244	0,239
	p	0,000***	0,000***	0,000***	0,000***
Feeling of helplessness	r	-0,196	0,170	0,224	0,246
	p	0,000***	0,000***	0,000***	0,000***

Spearman's rho Correlation Coefficient. *p<0.05, **p<0.01, ***p<0.001.

Table 4 shows A negative relation was found between egocentrism, which is one of the sub-dimensions of the ELA Scale, and the feeling of anxiety and helplessness, which are the sub-dimensions of the CCW Scale (p<0.001). A positive and statistically significant relationship was found between pesticide, consumption, and biodiversity, which are the sub-dimensions of the ELA Scale, and the feeling of anxiety and helplessness, which are the sub-dimensions of the CCW Scale (p<0.001).

Table 5. Multivariate Linear Regression Analysis of ELA Scale and CCW Scale

	Unadjusted				Adjusted			
Predictors	**B**	**SE**	**β**	**p**	**B**	**SE**	**β**	**p**
Egocentrism								
Anxiety	-0,060	0,070	-0,060	0,394	-0,042	0,068	-0,042	0,538
Feeling of helplessness	-0,152	0,070	-0,152	0,032	-0,171	0,067	-0,171	0,011*
	*(Adj.R^2:0,038, F:12.650***)*				*(Adj.R^2:0,120, F:12,467***)*			
Pesticide								
Anxiety	0,168	0,071	0,168	0,018	0,150	0,069	0,150	0,031*
Feeling of helplessness	0,019	0,071	0,019	0,784	0,021	0,069	0,021	0,763
	*(Adj.R^2:0,031, F:10,271***)*				*(Adj.R^2:0.077, F:7,998***)*			
Consumption								
Anxiety	0,190	0,070	0,190	0,007	0,192	0,070	0,192	0,006**
Feeling of helplessness	0,065	0,070	0,065	0,349	0,073	0,069	0,073	0,291
	*(Adj.R^2:0,057, F:18,895***)*				*(Adj.R^2:0.075, F:7,802***)*			
Biological diversity								
Anxiety	0,124	0,070	0,124	0,076	0,100	0,069	0,100	0,146
Feeling of helplessness	0,140	0,070	0,140	0,045	0,144	0,068	0,144	0,035*
	*(Adj.R^2:0,060, F:19,652***)*				*(Adj.R^2:0.099, F:10,196***)*			

*p<0.05, **p<0.01, ***p<0.001.

According to the Table 5 Multivariate Linear Regression Analysis, a negative and statistically significant association was detected between egocentrism, which is one of the sub-dimensions of the ELA Scale, and the feeling of helplessness, which are the sub-dimensions of the CCW Scale, in the model adjusted for gender, age, educational status, occupation, and perceived income level (p=0.011). Statistically significant and positive associations were found between pesticide and anxiety, one of the sub-dimensions of the ELA Scale (p=0.031); between consumption and anxiety (p=0.006); and between biodiversity and the feeling of helplessness (p=0.035).

DISCUSSION

In this study, the climate change anxiety levels of women were found to be higher; however, it was also found that women and those living in rural areas had a greater sense of helplessness about climate change. In another study by Aras & Demirci (2020) on the association between climate change and psychology, they stated that women might have higher environmental anxiety levels than men because of their limited access to economic resources and decision-making processes.[16] In the study conducted by Biçer & Vaizoğlu (2015), it was reported that two-thirds of the nursing department students, almost all of whom were women, were afraid of climate change and one-fifth felt helpless. This has recently been evaluated within the framework of the concepts of ecoanxiety. Although ecoanxiety is not considered a medical condition, the American Psychological Association (APA) defined it as “a chronic fear of environmental apocalypse.” It was reported that groups that were dependent on the land to sustain life were affected more (Arcanjo, 2005). This also explains the high sense of helplessness among those living in rural areas.

It was found in this study that the mean scores of egocentrism in ecological life were significantly lower in individuals who were aged 25 and over, white-collar employees, and those who reported that they had a good income. No significant differences could be found between egocentrism and gender, educational status, and place of residence. Çüçen (2011) discussed the egocentric perspective in parallel with the anthropocentric perspective and reported that egocentric people defended that they had the right to use the environment as they wished. According to Uzun & Sağlam (2006), qualified environmental education and environmental awareness play important roles in the permanent solution of environmental problems, and there is a linear relationship between environmental awareness and environmental academic success. Based on this point of view, Özgürler (2014) reported that it would be possible for people to understand the environment with education, natural resources, sustainable life, etc. to understand different problems in different fields and to produce solutions with the increase in approaches beneficial to nature seems possible with the increased education in this field. However, in the present study, although it was expected that the attitude toward egocentrism would decrease with the increasing education levels, such a result could not be determined in the findings obtained. Secondary school curricula in Turkey have focused on environmental pollution and environmental problems since 2005, and in primary school social studies and life studies lessons, living things and the protection of the environment, and environmental cleaning have been included. For the first time in our country, environmental education studies on this subject have been studied in this age group more systematically to include all students (Alım, 2006). Based on this point of view, it was seen that as of 2022, adults between the ages of 25 and 27 over the age of 25 have had equal opportunity to receive environmental education. This was supported by the study conducted by Kızılaslan & Kızılaslan (2005), which reported that people in the 20-38 age group had a high level of environmental awareness and a lower level of environmental awareness as they became older, and it was considered that young people can act faster in perceiving-comprehension-analysis than older people. Although mentioning that the environmental awareness level of young people will be higher in parallel with these, the fact that the mean score of egocentrism attitude in ecological life is significantly low in individuals who are aged 25 and over suggests that there are other variables other than environmental education in this respect.

It was determined in the present study that the mean score of attitude towards pesticide use in ecological life was positive and high in women, individuals aged 25 and over, those with university or higher education, and white-collar employees. In the study that was conducted by Tunçdemir (2016), 92.7% of the farmers who were between the ages of 22-64 and 90.0% of the farmers in the age group of 65 and over said that pesticides had negative effects on human health. No statistically significant differences were detected in terms of indicating whether pesticides had negative effects on human health according to the age groups of the farmers. In this respect, the present study supports the positive relationship between age and attitude towards pesticide use. In the study that was conducted by Israfilova (2019), in which the level of knowledge of university students about pesticides was evaluated in Azerbaijan, among the individuals aged between 18-22 (34.2%), 23-25 (39.4%), and 26-35 (26.4%), the rate of those who thought that “Pesticides do not harm the environment” was

48.4%.[24] The researcher explained this with the insufficient knowledge of the participants on pesticides and offered suggestions that would provide efficiency in pesticide and environmental education.

The mean scores of attitudes towards consumption in ecological life were found to be significantly higher in those aged 25 and over, blue-collar employees, and those with a good income level. In a study that was conducted by Yang & Archonditsis (2022), a positive increase was detected in ecological consumption behaviors as the education level and income level increased. Similarly, Balderjahn (1988) revealed a positive relationship between age, education level, income level, and ecological consumption preferences and Roberts (1996) found a similar relationship only with age and education level. In their study investigating whether there was a relationship between consumers' purchasing of green products and their demographic characteristics, Çabuk & Keleş (2008) found significant relationships between green purchasing behavior and gender, age, marital status, education level, and household income. It was determined that young individuals, who had high household incomes and education levels, showed more green purchasing behaviors. These results support our findings.

It was determined in this study that the mean scores of biodiversity attitudes in ecological life were significantly higher among women, those with university or higher education, white-collar employees, and those who reported that they had a good income level. No significant differences were detected between biodiversity, age, and place of residence, which are the sub-dimensions of the ELA Scale. According to Özbaş (2016), gender and class level did not have significant effects on the tendencies to protect and use biological diversity. In another study that was conducted by Uçak (2020), it was concluded that although the biological diversity attitudes of the students did not differ at significant levels according to the educational status of the father and the family income, the level of protection of biological diversity differed slightly when compared to the educational status of the mother.[30] According to the study findings of Ateş (2010), when the biological diversity value levels were examined, it was reported that the value levels of female and male students differed at significant levels and were in favor of females.

It was also found that as the feeling of helplessness, which is one of the sub-dimensions of the CCW scale, increased, the attitudes towards egocentrism, which is one of the sub-dimensions of the ELA scale, decreased, and positive attitudes towards biological diversity increased. It was also found that as the anxiety levels of the sub-dimensions of the CCW scale increased, the scores of positive attitudes towards the use of pesticides and consumption in ecological life from the sub-dimensions of the ELA scale increased. According to Kelly (2007), the elevated levels of stress and anxiety about climate change and the state of the world were an expression of a very high emphasis on nature. It was shown that this was related to the fact that students felt bad in environmental studies courses and their readiness increased with the education they received. It was reported in another study that eco-anger increased pro-climate activism and anger was an important adaptive emotional driver in engagement with the climate crisis. When evaluated from these aspects, it was found that our results were compatible with the literature data.

Limitations and strengths of the study

The fact that the study was conducted with an e-survey affects its generalizability to the population. However, reaching a large number of adults from all age groups is the strength of the study.

CONCLUSION AND RECOMMENDATIONS

It was found in the present study that the female gender had higher climate change anxiety levels and women and those living in rural areas had a greater sense of helplessness about climate change. It was also found that age, occupation, and income level were found to be the determinants in the mean scores of egocentrism in ecological life; gender, age, educational status, and occupation were the determinants in the mean scores of attitude towards pesticide use; age, occupation, and income level were the determinants in the mean scores of attitudes towards consumption; and gender, education, occupation, and income level were the determinants in the mean scores of attitudes towards biological diversity. According to the multivariate linear regression analysis, it was determined in the model adjusted for some variables that as the feeling of helplessness from the sub-dimensions of the CCW scale increased, the attitudes towards egocentrism from the sub-dimensions of the ELA scale decreased and the attitudes towards biological diversity increased. It was also found that as the anxiety levels of the sub-dimensions of the CCW scale increased, the scores of the attitudes towards pesticide use and consumption in ecological life, which are the sub-dimensions of the ELA scale, increased.

According to the study findings, it is especially necessary to ensure that women and people living in rural areas receive accurate information on climate change and that individual, national and local supports that will facilitate overcoming this problem are implemented.

To change egocentric attitudes in ecological life in favor of the environment, it is recommended to implement studies to encourage people to think about the importance of the issue, which will contribute to the level of knowledge on climate change, directly or indirectly, both through official channels and other channels in this field, and determine their effectiveness, starting from the pre-school age.

To change the attitudes towards pesticide use in the desired direction, it is necessary to conduct studies in this area, increase the awareness of individuals about the consequences of pesticide use, and develop suggestions for farmers to be an alternative to pesticides.

To change the attitude scores towards consumption in the desired direction, more solution-oriented searches should be created by making climate change a current issue in line with the principles of governance and the presentation of ecologically sensitive products to the public in a more economical way with state support. It is predicted that consumers will start to avoid purchasing products and services that are potentially harmful to nature and all living things with the increase in environmentalism and environmental awareness trends in societies, and they will start to prefer environmentally friendly, less energy-consuming, and recyclable products.

The relationship between the socio-demographic characteristics of consumers and their intentions to exhibit ecological consumption should also be investigated in different geographical regions, and the development of local recommendations may provide more effective results in future studies.

People faced with climate anxiety and climate crisis, especially young people, may have to cope with new psychological problems, and therefore, it is recommended that relevant institutions take action by collecting enough data. It is observed that studies on this subject in Turkey are not sufficient. It is necessary to examine how people in Turkey are affected by climate changes. The effects of climate change should be addressed specifically to the geography of Turkey, and people's needs in this area should be determined and they should be trained in coping with climate change. Here, both public health workers and educators working in this field have a great role. It is observed that studies on this subject in Turkey are not sufficient. It is necessary to examine how people in Turkey are affected by climate changes. The effects of climate change should be addressed specifically to the geography of Turkey, and people's needs in this area should be determined and they should be trained in coping with climate change. Here, both public health workers and educators working in this field have a great role.

Conflict of interest

Authors declared no conflict of interest.

Financial disclosure

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Ethİcal Text

In this article, journal writing rules, publication principles, research and publication ethics rules, journal ethics rules have been followed. Responsibility for any violations that may arise regarding the article belongs to the authors.

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