

The Relationship Between Temperament and Character Traits and Anger Response Styles in University Students

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ABSTRACT

The relationship between temperament and character traits and anger response styles in university students

Objective: The aim of this study is to determine the relationship between temperament and character and anger and anger response styles in late adolescent undergraduate university students.

Method: In this study, 227 university students aged between 18 and 25 years volunteered to participate. Temperament and Character Inventory (TCI), State-Trait Anger Expression Inventory (STAXI), and a Personal Information Form (PIF) prepared by one of the researchers were administered.

Results: The study found correlations between temperament and character and anger and anger response styles. While a positive correlation was found between trait anger and novelty seeking and harm avoidance, a negative correlation was found between trait anger and reward dependence, self-directedness, and cooperativeness. A positive correlation was found between anger-in and harm avoidance, a negative correlation was found between anger-in and reward dependence, self-directedness, and cooperativeness. A positive correlation was found between anger-out and novelty seeking while a negative correlation was found between reward dependence, self-directedness, and cooperativeness. Finally, a positive correlation was found between anger control and reward dependence, self-directedness and cooperativeness, while a negative correlation was found between anger control and novelty seeking. In addition to these results, some variables have an impact on temperament and anger response styles.

Conclusion: Our study is important in that it demonstrates a number of correlations between temperament and character traits and anger response styles. In order to examine the relation between anger and temperament in more detail, it seems necessary to carry out studies with younger adolescents. Another important aspect is to point out the need to take temperament traits into consideration in clinical applications.

Keywords: Anger, character, personality, temperament, university students



ÖZET

Üniversite öğrencilerinde öfke ifade tarzları ile mizaç ve karakter özellikleri arasındaki ilişki

Amaç: Araştırmanın amacı geç ergenlik döneminde yer alan üniversite öğrencilerinde mizaç ve karakter özellikleriyle öfke ve öfke ifade türleri arasındaki ilişkilerin belirlenmesidir.

Yöntem: Araştırmaya üniversite eğitimine devam eden 18-25 yaş arasındaki 227 kişi gönüllü olarak katılmıştır. Katılımcılara Mizaç ve Karakter Envanteri (MKE), Durumsal ve Sürekli Öfke-Öfke İfade Tarzı Ölçeği (SÖÖTO) ve araştırmacı tarafından hazırlanan Kişisel Bilgi Formu uygulanmıştır.

Bulgular: Sürekli öfke; yenilik arayışı ve zarardan kaçınmayla pozitif yönde ilişki gösterirken, ödül bağımlılığı, kendini yönetme ve işbirliği yapma ile negatif yönde ilişkili bulunmuştur. İçerideki öfke zarardan kaçınma ile pozitif yönde ilişki gösterirken, ödül bağımlılığı, işbirliği yapma ve kendini yönetme ile negatif yönde ilişki göstermiştir. Dışarıdaki öfke yenilik arayışı ile pozitif yönde ilişki gösterirken, ödül bağımlılığı, işbirliği yapma ve kendini yönetme ile negatif yönde ilişki göstermiştir. Son olarak öfke kontrolü ise yenilik arayışı ile negatif, ödül bağımlılığı, kendini yönetme ve işbirliği yapma ile pozitif yönde ilişkili bulunmuştur.

Sonuç: Çalışmamız öfke ifade türlerinin mizaç ve karakter özellikleriyle olan birtakım ilişkilerini gösterebilmiş olması bakımından önemlidir. Öfke ve mizaç ilişkilerinin daha ayrıntılı incelenmesi için daha erken dönemlerde yer alan ergenlerle yapılan çalışmalara ihtiyaç duyulmaktadır. Klinik uygulamalarda da mizaç özelliklerinin dikkate alınmasını vurgulaması açısından önemlidir.

Anahtar kelimeler: Öfke, karakter, kişilik, mizaç, üniversite öğrencileri

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INTRODUCTION

Anger can be defined as “a fairly intense negative sensation felt in situations of frustration, being attacked or threatened, disenfranchised, constrained, etcetera, that generally, one way or another, may result in aggressive behaviors directed against the object or person causing this feeling.” (1).

Spielberger (2) looked at the feeling of anger with a conceptual distinction into persistent (trait) and situational (state). State anger encompasses a subjective perception and feelings such as tension, indignation, or irritability of various intensity caused by the sensation that the subject has been obstructed during goal-oriented behavior or has been wronged. State anger is active, rooted in psychobiology, and it may show fluctuations in intensity over time. Trait anger determines, in general terms, how frequently state anger is being experienced. It expresses a condition of excessive excitability. Trait anger is a dimension that includes thought and attitudes and is more stable over time. According to Spielberger (3), the expression of anger is the verbal or behavioral conveying of the feeling of anger, which is an adaptive behavior in coping with anger. Internalization of anger is a mechanism used against anger factors in a person who is hiding the anger or keeping it inside. Anger control is a condition determining to what degree a person can control anger in relationships with others or how far they have a tendency towards calming down. A number of factors causing feelings of anger can be mentioned (4).

Today, it is commonly agreed that personality is a product of innate heritable dispositions and interactions with environmental influences. From this perspective, temperament expresses the biological contributions to personality (5).

A number of models are used to account for temperament. One approach was proposed by Cloninger. His psychobiological model is based on longitudinal family and twin studies, neurobehavioral and neuropharmacological learning studies, and psychometric research (6).

Cloninger (7) defined the following dimensions of temperament: novelty seeking, reward dependence,

harm avoidance, and persistence. These dimensions of temperament are in control of everybody’s distinctive basic feelings, namely, anger, attachment, fear, and ambition, respectively, which can be observed from the earliest stages of life (6).

The harm avoidance dimension of the temperament expresses passive-avoidant behaviors such as pessimism regarding potential future problems, fear of uncertainty, shyness in front of strangers, or easy fatigability. The reward dependence dimension is seen in a continuous disposition towards behaviors expressing excessive emotionality, social dependence, and a dependency on confirmation by others. Another subdimension of the temperament is novelty seeking. In this subdimension, people display frequent exploratory activity in response to novelty, impulsive decision making, exaggeration or excess on the potential occasion of receiving a reward, quick temper, and active avoidance of frustration. The persistence dimension of temperament expresses behavior of perseverance despite frustration, fatigue, or intermittent reinforcement (7).

The personality model was broadened by Cloninger et al. (8) to include the development of basic character traits. While it is assumed that the four temperament factors are innate, based on neurobiology, the three character dimensions of self-directedness, cooperativeness, and self-transcendence (8) are thought to be partly innate but mostly shaped by sociocultural factors (9).

The character trait self-directedness defines persons with a potential for personal leadership as mature, strong, self-sufficient, responsible, secure, goal-oriented, structured, and integrated people. Persons disposed to cooperate are content about other people’s success, try to enter into cooperation with others as much as possible, and are empathetic, tolerant, supportive, compassionate, principled, and just. Self-transcendent persons are characterized by being modest, content, patient, altruistic, creative, and spiritual (7).

A review of the literature has shown that there are relations between some dimensions of temperament and character traits and anger response styles (10-16). These studies were usually carried out with specific groups, such as eating disorder patients, health

workers, or patients with migraine. One of these studies examined a group of eating disorder patients between the ages of 17 and 32 years, finding a positive correlation between novelty seeking and trait anger and anger-out, and a negative correlation between anger-in and anger control (14). Another study with migraine patients found a positive correlation between trait anger and harm avoidance and self-directedness and a negative correlation between persistence and cooperativeness. Anger-in was found to be positively correlated with self-transcendence and harm avoidance and negatively correlated with novelty seeking. While anger-out was negatively correlated with self-directedness and cooperativeness, its correlation with novelty seeking was found to be positive (11).

Adolescents, because of the problems resulting from their efforts to adapt to changes in their person, frequently get angry and easily experience bouts of anger (17).

There are different definitions for the beginning and ending of adolescence. While UNESCO defines adolescence as the period between the ages of 15 and 25 years, the United Nations consider the age between 12 and 25 years as adolescence (18). The period between the ages of 18 and 25 years can be called late adolescence (19). There are studies in the literature accepting this age range as late adolescence (20,21). For official reasons and according to the ages for which the scales can be used, the present study has been performed with late adolescents. For the sake of easy access to this age group in Turkey, university students were enrolled in the study. In line with this data, the aim of our study was to establish basic correlations between temperament and character traits and anger response styles among late adolescent university students aged between 18 and 24 and to investigate if there is a correlation between subdimensions of temperament and character dimensions and anger response styles.

METHOD

Participants included in the study were university students. A total of 227 persons volunteered to participate. Sample selection was carried out with a reachable sample method. Written informed consent was obtained.

Instruments for Data Collection

Personal Information Form (PIF): This form was designed by one of the researchers to record information such as participants' age, gender, field of study, and year of study.

Temperament and Character Inventory (TCI): The TCI was developed by Cloninger et al. (5,8) to measure the seven dimensions of personality. The inventory is a self-reporting scale consisting of 240 items with right/wrong answers. There is no time limit; the form can be completed in 30-40 min. Validity and reliability of the scale have been tested both in the general population and among psychiatric patients.

Turkish version of the TCI was validated by Kose et al. (22). Cronbach's alpha values for the temperament dimension were between 0.60 and 0.85, for the character dimensions between 0.82 and 0.83.

In another validity and reliability study of MKE Turkish version, which was conducted by Arkar et al. (23) in healthy volunteers who did not receive psychiatric treatment and psychiatric patients, Cronbach's alpha values for the temperament dimension were between 0.55 and 0.84, for the character dimension between 0.80 and 0.84. Both studies found an acceptable validity and reliability level for the Turkish TCI scale and its subscales.

The TCI can be applied for age 17 and above (22,23).

State-Trait Anger Expression Inventory (STAXI): The original form was developed by Spielberger. The State-Trait Anger Expression Inventory was developed in two stages. First, Spielberger et al. (2,3) developed a 20-item State-Trait Anger Inventory. This began as a 30-item form administered to 146 university students and 270 navy soldiers, and subsequently the 20 items with the highest psychometric characteristics were selected to make up the State Anger and Trait Anger Scales. In a second step, as the studies creating the initial scale had shown that the expression of anger was important, a second, 24-item form was developed in order to measure "suppressed" (inward-oriented) and "outward" anger expression (24).

Adaptation of the scale into Turkish was done by Ozer (24). Validity and reliability studies were carried out with a broad sample group including high school and university students, students at a nursing school, administrators, and patients. For the Turkish form of the instrument, alpha values were calculated on the basis of data from all groups, separately for each subtest. Cronbach's alpha values were 0.79 for the trait anger dimension, 0.84 for the controlled anger dimension, 0.78 for the expressed anger dimension, and 0.62 for the suppressed (inward-oriented) anger dimension. For the validity of the scale, correlational and structure validity were studied and the significance level reached 0.01-0.001 (24).

Data Collection

Data were collected after explaining to the participating adolescents the aim of the study and informing them about the scales and the voluntary nature of participation. In the interest of data confidentiality, participants' name, number, or similar information were not requested. Data were collected in the winter term 2012-2013 during one month between December and January.

Implementation

Initially, the participants were provided with information about the study. Then, it was pointed out that participation in the study was voluntary and could be terminated if they did not want to continue. It was mentioned that answering the questions on the form truthfully was important, which was also emphasized in the instruction sheet. The instructions written on top of the form were at the same time explained to the participants verbally.

Administration was done in two ways. The first method included putting the forms on the internet, where people could complete them. The second approach used paper forms to be filled in by the subjects in the traditional manner. While the personal data sheet and STAXI were completed, another template was prepared for TCI. In order to prevent

missing data in the answers, in the paper version the researcher controlled the form, while the software in the computerized system informed the subjects that in order to finish the scale, potentially omitted questions needed to be answered.

In order to avoid copying, the scales were given to the participants in different order. Half of the participants completed the TCI first, the other half STAXI. Filling in all forms took a person approximately 1 hour.

Statistical Analysis

Data were analyzed using the SPSS 16.0 package. Before entering the data, they were checked for completeness and correctness. The required normal distribution was controlled using Kolmogorov-Smirnov test. According to the study aim, Pearson correlation method, multiple regression analysis and variance analysis (ANOVA) were applied.

RESULTS

Of the study participants, 59.5% (n=135) were female, 40.5% (n=92) male. According to distribution by year of study, the least represented group was the preparation year with 5.7% (n=13). Following in ascending order were the 2nd year with 16.3% (n=37), 3rd year with 16.7% (n=38), 4th year with 24.2% (n=55), and the 1st year with 37% (n=84). Mean age of the group was 20.42 years.

Results Relating to Anger

Mean score and standard deviation of the STAXI points scored by the participating university students were 21.90 (SD=4.85) for trait anger, 16.05 (SD=3.60) for the anger-out subscale, 16.86 (SD=4.01) for the anger-in subscale, and 21.59 (SD=4.49) for the anger control subscale.

Results Relating to Temperament

The following mean scores and standard deviations were found in the participants' TCI scores: Novelty

seeking subscale 32.36 SD=3.32, Harm avoidance subscale 27.16 SD=3.33, Reward dependence subscale 16.50 SD=2.60, Persistence subscale 5.87 SD=1.4. For the character dimension, the results were: Self-directedness subscale 39.83 SD=2.46, Cooperativeness subscale 36.24 SD=3.42, and Self-transcendence subscale 20.59 SD=5.72.

Results Relating to the Correlation Between Anger and Temperament

To understand the relationship between temperament and anger, the main aim of the study, the Pearson Correlation Coefficient Method was used. Data regarding the relation between temperament and anger are shown in Table 1.

Results Relating to Multiple Regression Analyses

To predict anger scores, multiple regression analysis was performed. Results are shown in Tables 2 and 3.

Results of Multiple Regression Analysis for Trait Anger Scores

To predict trait anger, the TCI's four temperament and three character dimensions were entered as predictor variables into the multiple regression analysis. According to the stepwise entry, trait anger was predicted by the temperament dimensions novelty seeking and harm avoidance and the character dimension cooperativeness. Increase in trait anger was correlated with a rise in novelty seeking and harm avoidance scores and a decrease in cooperativeness score. According to the standardized regression coefficient (β), predictor variables for trait anger are in the order of significance: novelty seeking, cooperativeness, and harm avoidance. The significance of regression coefficients was examined with the t test, finding all predictors to be significant for trait anger. These dimensions account for 18% of the variance in trait anger. Table 2 shows the results of multiple regression analysis for trait anger scores.

Table 1: Correlation between temperament and anger

	Novelty seeking	Harm avoidance	Reward dependence	Persistence	Self-directedness	Cooperativeness	Self-transcendence
Trait anger	0.28**	0.14**	-0.16*	0.03	-0.19**	-0.27**	0.02
Anger-out	0.33**	-0.01	-0.20**	0.01	-0.23**	-0.24**	0.07
Anger-in	0.02	0.31**	-0.14*	0.03	-0.22**	-0.25**	-0.12
Anger control	-0.17**	-0.12	0.13*	0.07	0.23**	0.26**	0.06

*p<0.05, **p<0.01

Table 2: Results of multiple regression analysis for trait anger and anger-in prediction

Variable	B	Standard Deviation B	β	t	p	Two-tailed correlation (r)	Partial correlation
Constant	14.001	5.084		2.754	<0.001		
Novelty seeking	0.455	0.089	0.312	5.088	<0.001	0.275	0.323
Cooperativeness	-0.388	0.086	-0.274	-4.519	<0.001	-0.267	-0.290
Harm avoidance	0.265	0.089	0.182	2.975	<0.001	0.137	0.195
Trait anger R=0.429 R²=0.184							
Constant	25.348	4.611		5.497	<0.001		
Harm avoidance	0.379	0.073	0.315	5.205	<0.001	0.310	0.330
Cooperativeness	-0.223	0.075	-0.190	-2.956	<0.001	-0.247	-0.195
Self-directedness	-0.322	0.108	-0.197	-2.968	<0.001	-0.234	-0.195
Persistence	0.361	0.171	0.133	2.108	<0.01	0.027	0.140
Anger-in R=0.441 R²=0.194							

Table 3: Multiple regression analysis results relating to anger-out and anger control prediction

Variable	B	Standard Deviation B	β	t	p	Two-tailed correlation (r)	Partial correlation
Constant	13.869	3.115		4.452	<0.001		
Novelty seeking	0.362	0.066	0.334	5.492	<0.001	0.327	0.344
Cooperativeness	-0.263	0.064	-0.251	-4.113	<0.001	-0.241	-0.265
Anger-out R=0.412 R²=0.170							
Constant	14.824	6.305		2.351	<0.01		
Cooperativeness	0.28	0.087	0.213	3.196	<0.001	0.259	0.21
Novelty seeking	-0.254	0.086	-0.188	-2.97	<0.001	-0.167	-0.195
Harm avoidance	-0.201	0.085	-0.149	-2.362	<0.01	-0.125	-0.157
Self-directedness	0.259	0.122	0.142	2.122	<0.01	0.231	0.141
Anger control R=0.372 R²=0.138							

Multiple Regression Analysis Results for Anger-in Scores

In multiple regression analysis to predict anger-in, according to stepwise entry, anger-in was predicted by the temperament dimensions harm avoidance and persistence and by the character dimensions cooperativeness and self-directedness. Increase in anger-in was correlated with rise in persistence and harm avoidance and with a decrease in cooperativeness and self-directedness. According to the standardized regression coefficient (β), predictor variables for anger-in are in the order of significance: harm avoidance, self-directedness, cooperativeness, and persistence. The significance of regression coefficients was examined with the t test, finding all predictors to be significant for anger-in. These dimensions account for 19% of the variance in anger-in. Table 2 shows the results of multiple regression analysis for the prediction of anger-in scores.

Multiple Regression Analysis Results for Anger-out Scores

In multiple regression analysis to predict anger-out, according to stepwise entry, anger-out was predicted by the temperament dimension novelty seeking and by the character dimension cooperativeness. Increase in anger-out was correlated with rise in novelty seeking and with a decrease in cooperativeness. According to the standardized regression coefficient (β), predictor variables for anger-out are in the order of significance: novelty seeking and cooperativeness. The significance of

regression coefficients was examined with the t test, finding both predictors to be significant for anger-out. These dimensions account for 17% of the variance in anger-in. Table 3 shows the results of multiple regression analysis for the prediction of anger-out scores.

Multiple Regression Analysis Results for Anger Control Scores

In multiple regression analysis to predict anger control, according to stepwise entry, anger control was predicted by the temperament dimensions novelty seeking and harm avoidance and by the character dimensions cooperativeness and self-directedness. Increase in anger control was correlated with increase in cooperativeness and self-directedness scores and with a decrease in novelty seeking and harm avoidance. According to the standardized regression coefficient (β), predictor variables for anger-in are in the order of significance: cooperativeness, novelty seeking, harm avoidance, and self-directedness. The significance of regression coefficients was examined with the t test, finding all predictors to be significant for anger control. These dimensions account for 14% of the variance in anger-in. Table 3 shows the results of multiple regression analysis for the prediction of anger control scores.

DISCUSSION

Main findings of the present study were that with increasing expression of trait anger, as well as anger-in and anger-out, reward dependence, self-directedness, and

cooperativeness all decrease. Contrariwise, with an increased capability of anger control, at the same time reward dependence, self-directedness, and cooperative increase. While some studies do not show a correlation between trait anger and the temperament dimension of novelty seeking (10,11,13), there are also studies in the literature showing such a correlation (14). Thus, our study is in line with those finding a correlation. What the studies not finding a correlation have in common is that the great majority of their samples consisted of adult individuals. However, one study from this group, the work by Arnett, used a group described as late adolescent/early adult persons. At that stage, people are still discovering their identity and experiment in various areas (25,26). As novelty seeking is one of the most distinct temperament traits, it can be understood from this perspective that the researcher found a correlation with trait anger in persons from this age group. From this perspective, it can be understood that there is a correlation between the character trait novelty seeking, one of the most distinctive traits, and trait anger in individuals of this age group. The positive correlation between trait anger and harm avoidance is frequently demonstrated in the Turkish and non-Turkish literature (11,13,14). The negative correlation between trait anger and reward dependence (11,13,14), self-directedness (13,14), and cooperativeness (11,13,14) is also consistent with the literature. This correlation has been demonstrated in various samples, including late adolescents.

For anger-in, the most commonly reported correlation was with the temperament dimension harm avoidance (11,13,14). This was also the case in our study. This relation means that persons with increasing tendency towards harm avoidance suppress their present anger in order to avoid harm arriving from the outside. From this perspective, the display of anger-in by people with such a tendency is an expected outcome. The negative correlation of anger-in with reward dependence (13), self-directedness (13,14), and cooperativeness (13) is consistent with the literature. However, there are only few studies showing these results at the same time; hence our study is important.

Anger-out showed a positive correlation with the temperament dimension novelty seeking and a negative

correlation with the temperament dimension reward dependence as well as with the character dimensions self-directedness and cooperativeness. There is only a limited number of studies showing a positive correlation of anger-out with novelty seeking (14). Other studies reviewed either did not show a correlation, or the correlation was negative (10,11,13). One of the characteristics of the temperament dimension novelty seeking is that people have a quick temper and experience intense anger. From that perspective, the display of anger-out in easily angry persons is understandable. The number of studies showing a negative correlation between anger-out and reward dependence is also small (10). Considering that a low tendency toward reward dependence characterizes a colder, distant personality preferring solitude, it is possible that these persons in their anger do not care about their environment and whatever it contains and thus show their anger outwardly. Therefore, with decreasing reward dependence the display of anger-out can increase. The negative correlation between anger-out and the character dimensions self-directedness and cooperativeness supports the findings reported in the literature (10,11,13,14).

Finally, the anger control dimension was correlated negatively with novelty seeking and positively with reward dependence, self-directedness, and cooperativeness. The literature does not provide much information about correlations with this dimension. There are only few studies that found a negative correlation between novelty seeking and anger control (14). One of the disadvantages of high novelty seeking is that people have a very short temper. In quickly angered persons, anger control takes time. Therefore, a negative correlation is understandable. A correlation between anger control and reward dependence is rarely shown in the literature, too (10). Such a positive correlation becomes understandable considering the characteristics of these dimensions. Persons with a high tendency towards reward dependence are more affectionate and sensitive, giving more importance to social relations. It can be seen more easily that such persons need to have personality structures enabling anger control. A significant number of studies show a positive correlation between anger control and self-

directedness as well as cooperativeness (10,11,14).

According to multiple regression analysis, personality traits explain anger and anger response styles with a variance between 14 and 19%. The personality traits predicting anger-in explained the highest variance value with a total rate of 19%. On the second rank came temperament and character traits explaining 18% of trait anger variance. Third in line came personality traits predicting anger-out, explaining 17% of its variance. Last were personality traits explaining 14% of the variance of anger control. Analyzing these results, we see that the character dimension of cooperativeness affects all dimensions of anger. How important it is in daily life to be a person inclined to cooperativeness has often been studied, in research about anger as well as concerning different topics such as confidence (27-31).

Finally, it has been shown that the anger problem is a multidimensional construct related with temperament and character traits and a number of variables. Approaching problems related to anger, we also need to consider related personality traits in order to produce information that is valuable both conceptually and in its application. In order to research the relation between temperament and character traits and anger response styles during adolescence in detail, we also need studies done in the early and intermediate phases of adolescence. Ours is one of a small number of studies demonstrating the relation between temperament and character traits and anger and anger response styles. The small number of studies in this area found in the literature makes it difficult to comment. Thus, future studies investigating temperament in larger samples and repeating this relation in more varied samples will

provide important information, especially allowing for developmental assessment.

CONCLUSION

This is a relational study carried out with late adolescents in university education. One of its limitation is that it did not include members of this age group not pursuing university education. Another limitation is that the correlation (r) values obtained were weak. While some correlations between anger response styles and temperament and character traits could be shown, these correlations were weak, which is another limitation. In addition, in our comments we also need to consider that other states potentially related with anger, such as anxiety or depression, have not been studied. Furthermore, the study is limited by the absence of participants in earlier stages of adolescence. It is important to keep these limitations in mind when interpreting the findings.

Contribution Categories	Name of Author
Development of study idea	N.A.
Methodological design of the study	H.A.
Data acquisition and process	N.A.
Data analysis and interpretation	H.A.
Literature review	H.A.
Manuscript writing	N.A.
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