

# Relationship of Personality and Temperament Traits with Pain and Function in Patients with Knee Osteoarthritis

Ali İnaltekin,<sup>1</sup> Köksal Sarıhan<sup>2</sup>

<sup>1</sup>Department of Psychiatry,  
Kastamonu University School of  
Medicine, Kastamonu, Türkiye  
<sup>2</sup>Oltu State Hospital, Erzurum,  
Türkiye

Submitted: 25.07.2023  
Revised: 26.02.2024  
Accepted: 09.03.2024

Correspondence: Ali İnaltekin,  
Kastamonu University School of  
Medicine,  
Kastamonu, Türkiye  
E-mail: ali.inaltekin@hotmail.com



**Keywords:** Function; osteo-  
arthritis; pain; personality;  
temperament.



This work is licensed under a Creative Commons  
Attribution-NonCommercial 4.0 International License.

## ABSTRACT

**Objective:** There are a few studies on the relationship between personality and temperament types and functionality and pain felt in patients with knee osteoarthritis (OA). This study aimed to determine the relationship between personality and temperament characteristics and pain and function in patients with knee OA.

**Methods:** The study included 126 patients diagnosed with knee OA who met the inclusion criteria. Eysenck Personality Questionnaire Revised-Short Form (EPQR-S) and Type D Personality Scale (DS-14) were used for personality assessment, Temperament Evaluation of Memphis, Pisa, and San Diego Auto-questionnaire (TEMPS-A) was employed for temperament assessment, and Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) was used for OA pain and general function assessment.

**Results:** Of the participants, 58 (46%) showed Type D personality traits, while depressive temperament was dominant in 18 (14.3%) participants, irritable temperament in 12 (9.5%), and anxious temperament in 16 (17.3%) participants. Those with Type D personality had worse functions, and Type D personality was positively associated with pain and total WOMAC score. Total WOMAC score showed a positive correlation with neuroticism and psychoticism personality traits and cyclothymic and nervous temperament traits.

**Conclusion:** This study demonstrates that pain and total WOMAC score are associated with personality and temperament characteristics in patients with knee OA. In addition to pharmacological and physical therapy, interventions in these areas may be beneficial.

## INTRODUCTION

Chronic pain is one of the rapidly growing public health problems with a significant social burden. The chronic pain costs are estimated to exceed the total costs spent on diabetes, heart disease, and cancer.<sup>[1]</sup> Overall, osteoarthritis (OA) affected 303 million people worldwide in 2017 and was one of the leading causes of disability among chronic pain sufferers.<sup>[2]</sup> Although it can be seen in any diarthrodial joint, OA most commonly occurs in the hands, knees, and hip joints, with the highest prevalence in the knee.<sup>[3]</sup> When it is symptomatic, OA leads to significant declines in emotional and physical health, social functioning, and daily life activities. Hip and knee OA ranked as the eleventh leading cause of global disability out of 291 conditions, and OA pain is considered to be a leading cause of mobility impairment in older adults.<sup>[4]</sup> These rates are projected to rise as a result of longer life expectancy, increasing prevalence of obesity, and a growing elderly population.

Personality and temperament describe how individuals

perceive their environment, relate, and think about the environment. In addition, they may be affected by traumas that may cause depression or anxiety.<sup>[5]</sup> Anxiety can be defined as state anxiety and trait anxiety. State anxiety is a transient emotional state and can be reflected in thought, emotion, and behavior at a given moment. However, trait anxiety persists for a long time and may reflect a persistent pattern of emotions, thoughts, and behaviors. These different thoughts and behaviors can change the perception of pain, disability, and quality of life. Many of these can be found in various personality types and can affect the severity of pain, quality of life, and functionality of the person.

Studies investigating chronic pain and personality traits have shown that higher harm avoidance and lower self-management may be leading personality traits in chronic pain sufferers, with an association between neuroticism and pain.<sup>[6-11]</sup> However, to the best of our knowledge, including these studies, few studies examine the patient group with OA, one of the most common causes of chronic pain, as a sample. This study investigated the rela-

tionship between personality and temperament characteristics and pain and functionality in patients with knee OA.

## MATERIALS AND METHODS

A priori power analysis was performed with G\*Power version 3.1.9.4 to determine the minimum sample size required for the study. The results showed that at  $\alpha=0.05$  significance criterion for correlation analysis, the required sample size was  $N=84$  to reach 80% power to detect a medium effect. The study included 126 patients who presented to the physical therapy and rehabilitation clinic of Oltu State Hospital with knee pain and were diagnosed with idiopathic knee OA according to the classification criteria<sup>[12]</sup> for the subgroups of OA. Uncooperative patients who had secondary OA, low back or hip pain, systemic inflammatory disease, and cancer and had received physical therapy or intra-articular injections within the last six months were excluded from the study. Written informed consent was obtained from the patients. Ethics committee approval was obtained from the Erzurum Regional Training and Research Hospital Ethics Committee. (Number: 37732058-514.10). The study was conducted under the 1964 Declaration of Helsinki principles and its later amendments.

### Data Collection Tools

**Sociodemographic Data Form:** A questionnaire form was prepared by the authors to obtain information on patients' sociodemographic data characteristics such as age, gender, education, employment status, and disease duration.

**Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC):** It is a scale recommended by Outcome Measures in Rheumatology Clinical Trials (OMERACT) for studies on OA. The Turkish validity and reliability study of the scale was conducted by Tuzun et al.<sup>[13]</sup> The scale consists of three subscales: pain, stiffness, and physical function, with a total of 24 questions. High scores indicate increased pain and stiffness and deterioration in physical function.<sup>[13]</sup>

**Eysenck Personality Questionnaire Revised-Short Form (EPQR-S):** This 24-item questionnaire evaluates three dimensions of personality: extraversion (more participation in social activities, more talkative), neuroticism (stressed, anxious, over-focusing on somatic sensations and interpreting somatic sensations as harmful or threatening), and psychoticism (low social functioning). In addition to these three domains, it aims to prevent bias and increase the validity of the questionnaire with the lying subscale. The score that can be obtained for each personality trait varies between 0 and 6. The Turkish validity and reliability study of the scale was conducted by Karanci et al.<sup>[14]</sup>

**Temperament Evaluation of Memphis, Pisa, and San Diego Auto-questionnaire (TEMPS-A):** The scale evaluating dominant affective temperament types such as depressive, cyclothymic, hyperthymic, nervous, and anxious was developed by Akiskal et al.<sup>[15]</sup> The cut-off score of the

9-item scale was found to be 13 for depressive, 18 for cyclothymic, 20 for hyperthymic, 13 for nervous, and 18 for anxious temperament.<sup>[16]</sup>

**Type D Personality Scale (DS-I4):** Individuals with negative affect usually have a depressed mood, feel less well, and exhibit more physical symptoms. Socially introverted individuals feel nervous, insecure, and suppressed. Negative affectivity and social introversion are seen together in individuals with type D personality. The scale was developed to assess Type D personality. It consists of 14 items and two subscales of negative affectivity and social inhibition. Those who score  $\geq 10$  points on the two subscales are considered to have a Type D personality. The Turkish validity and reliability study of the scale developed by Denollet<sup>[17]</sup> was conducted by Alcelik et al.<sup>[18]</sup>

### Statistical Analysis

The data used were analyzed with SPSS version 24.0. Mean and standard deviation were used to summarize the data. The Kolmogorov-Smirnov test was used to analyze the normality of the data. The independent samples t-test was used to compare WOMAC data between groups. Pearson's correlation analysis was used for normally distributed data, while Spearman's correlation analysis was used for non-normally distributed data. A p-value less than 0.05 was considered statistically significant.

## RESULTS

There were 84 female and 42 male participants with knee OA. The mean age of the participants was  $59.37 \pm 9.29$  years, the educational level was  $6.06 \pm 2.19$  years, the disease duration was  $3.60 \pm 4.17$  years, and the body mass index (BMI) was  $31.17 \pm 6.28$ . Only 18 (14.3%) participants were employed. The evaluation by the DS-I4 cut-off score

**Table 1.** Socio-demographic and other characteristics of the participants

Variables	Value, n (%)
Gender (female/male)	84/42 (66.7/33.3)
Employed/Non-employed	18/108 (14.3/85.7)
Unilateral knee/Bilateral knee	52/74 (41.3/58.7)
Age, mean $\pm$ SD	59.37 $\pm$ 9.29
Educational level (year), mean $\pm$ SD	6.06 $\pm$ 2.19
Disease duration (year), mean $\pm$ SD	3.60 $\pm$ 4.17
BMI, mean $\pm$ SD	31.17 $\pm$ 6.28
Dominant temperament	
Depressive	18 (14.3)
Cyclothymic	0 (0)
Hyperthymic	0 (0)
Irritable	12 (9.5)
Anxious	16 (17.3)
Type D personality (yes/none)	58/68 (46/54)

SD: Standard deviation; BMI: Body mass index.

**Table 2.** Comparison of WOMAC scores of the groups

Group	Pain	p	Stiffness	p	Function	p	Total WOMAC score	p
Female	12.29±4.38	0.497	4.68±2.17	0.252	43.14±13.39	0.234	60.49±18.16	0.209
Male	11.71±4.55		4.21±2.06		40.09±13.68		56.21±17.41	
Unilateral knee	11.15±4.30	0.045	4.08±2.13	0.049	39.62±13.50	0.080	55.15±18.19	0.040
Bilateral knee	12.76±4.42		4.84±2.10		43.90±13.52		61.81±17.39	
Type D personality (+)	12.48±4.37	0.366	5.21±1.44	<0.001	43.31±11.66	0.357	61.41±15.69	0.168
Type D personality (-)	11.76±4.47		3.94±2.45		41.12±14.92		57.06±19.58	

**Table 3.** Correlation of variables with pain

	R	P
Age	0.102	0.254*
Educational level	-0.252	0.004*
Disease duration	0.114	0.205**
BMI	-0.148	0.098*
Personality		
Type D personality	0.226	0.011*
Extraversion	-0.126	0.160*
Neuroticism	0.098	0.274*
Psychoticism	0.053	0.552**
Temperament		
Depressive	0.050	0.575*
Cyclothymic	0.105	0.241*
Hyperthymic	-0.14	0.874*
Irritabl	0.124	0.165**
Anxious	0.102	0.256*

BMI: Body mass index; \*:Pearson correlation analysis; \*\*: Spearmen correlation analysis.

**Table 4.** Correlation of variables with total WOMAC score

	r	P
Age	0.148	0.099*
Educational level	-0.301	0.001*
Disease duration	0.241	0.006**
BMI	0.16	0.856*
Personality		
Type D personality	0.336	<0.001*
Extraversion	-0.115	0.201*
Neuroticism	0.223	0.012*
Psychoticism	0.180	0.044**
Temperament		
Depressive	0.175	0.05*
Cyclothymic	0.212	0.017*
Hyperthymic	-0.99	0.271*
Irritabl	0.309	<0.001**
Anxious	0.144	0.109*

BMI: Body mass index; \*:Pearson correlation analysis; \*\*: Spearmen correlation analysis.

revealed that 58 (46%) participants had Type D personality traits. The evaluation of the dominant temperament by the TEMPS-A cut-off scores showed that depressive temperament was dominant in 18 (14.3%) participants, irritable temperament in 12 (9.5%) participants, and anxious temperament in 16 (17.3%) participants (Table 1).

The classification of the participants by gender revealed no significant difference between the female and male groups in terms of pain, stiffness, function, and total WOMAC scores ( $p>0.05$  for all). The classification of the participants as unilateral and bilateral knee OA showed a significant difference in terms of pain, stiffness, and total WOMAC scores in the bilateral knee OA group ( $p=0.045$ ,  $p=0.049$ ,  $p=0.040$ , respectively), while there was no significant difference in terms of function ( $p=0.080$ ). The classification of those with and without Type D personality revealed a significant difference in terms of function, which was worse in those with Type D personality ( $p<0.001$ ), while there was no significant difference between the groups in terms of pain, stiffness, and total WOMAC scores ( $p>0.05$  for all) (Table 2).

The evaluation of the correlation of pain level with some variables and personality temperament characteristics showed a negative correlation ( $r=-0.252$ ,  $p=0.004$ ) with the duration of education and a positive correlation ( $r=0.226$ ,  $p=0.011$ ) with Type D personality (Table 3).

The evaluation of the correlation of total WOMAC score with some variables and personality temperament characteristics revealed a negative correlation with the duration of education ( $r=-0.301$ ,  $p=0.001$ ), a positive correlation with disease duration ( $r=0.241$ ,  $p=0.006$ ), a positive correlation with Type D personality, neuroticism, and psychoticism ( $r=0.336$ ,  $p<0.001$ ;  $r=0.223$ ,  $p=0.012$ ;  $r=0.180$ ,  $p=0.044$ , respectively), and a positive correlation with cyclothymic and irritable temperament ( $r=0.212$ ,  $p=0.017$ ;  $r=0.309$ ,  $p<0.001$ , respectively) (Table 4).

## DISCUSSION

In the study, it was demonstrated that there was a negative correlation between pain level and education and a positive correlation between pain level and Type D personality in patients with knee OA. The results revealed a negative correlation between total WOMAC score and

duration of education, a positive correlation between total WOMAC score and Type D personality traits, neuroticism, psychoticism personality traits, and a positive correlation between total WOMAC score and cyclothymic and irritable temperament traits.

Previous studies on personality traits found that negative affective states, depression, and neuroticism were highly associated with pain and disability in OA patients.<sup>[19,20]</sup> Moreover, a prospective study on neuroticism predicted higher joint pain levels after 23 years.<sup>[21]</sup> Our study showed no correlation with pain, but there was a positive correlation between neuroticism and psychoticism and total WOMAC score, which also evaluates pain, stiffness, and functionality. Personality traits such as neuroticism and psychoticism may have a negative effect on diverting situational pain-related attention response from pain sensation to another direction and on cognitive distraction mechanisms.<sup>[22]</sup> In addition, it has been suggested that psychoticism is a personality trait that is a predictor of bodily symptoms.<sup>[23]</sup> These negative effects may be associated with the results of our study.

Our study is the first to assess Type D personality in patients with knee OA. Previous studies with fibromyalgia and ankylosing spondylitis patient groups found that patients with Type D personality were worse in terms of pain, physical mobility, sleep, and social and emotional functions compared to patients without Type D personality.<sup>[24,25]</sup> Furthermore, Type D personality, including chronic pain, has been associated with increased the number or severity of reported health complaints. The comparison of the groups with and without Type D personality in our study showed a significant difference only in terms of the WOMAC stiffness score, while there was a positive correlation between the Type D personality score and both pain and total WOMAC score.

A previous study conducted in our country evaluated temperament characteristics of OA patients and found a higher rate of depressive and anxious dominant temperament and no correlation with pain.<sup>[26]</sup> In our study, the dominant temperament rates were similar, and no correlation was found with pain. Moreover, there was a positive correlation between total WOMAC score and cyclothymic and irritable temperament. Individuals with a depressive temperament have low energy and exhibit negative cognitions and emotions. In anxious temperament, the person tends to constantly worry about the well-being of himself/herself and his/her relatives. It involves hyperthymic temperament, enthusiastic temperament, and behavioral excesses. Irritable temperament is characterized by a highly unbalanced mixture of dysthymic and hyperthymic characteristics, exhibiting characteristics such as overly critical attitudes and outbursts of anger. Cyclothymic temperament is characterized by mood swings between depressive and hyperthymic characteristics.<sup>[27,28]</sup> The prevalence of depressive and anxious temperament in patients with knee OA and the positive correlation of total WOMAC score with cyclothymic and irritable temperament may be

the subject of research for future studies. There is a need for further research on these issues.

Consistently with previous studies,<sup>[29,30]</sup> there was no difference between the gender groups in terms of pain and other WOMAC scores in our study. Interestingly, our study showed no correlation between age and pain and the WOMAC sub-scores, although the prevalence of knee OA increased with age. This may be due to the higher prevalence of life stress and hypochondriasis, which are associated with higher pain scores in young people.<sup>[31]</sup> Obesity, which is a known risk factor for the development of OA, has been associated with increased severity of OA-related pain.<sup>[32]</sup> However, in our study, as in the study of Somers et al.,<sup>[33]</sup> it was found that BMI was not correlated with pain scale scores. In line with another study conducted in our country,<sup>[34]</sup> there was a negative correlation between educational level and the WOMAC scores. This may be related to the association of a low level of education with the inability to interpret pain sensation and to cope with pain and disability. As expected, pain, stiffness, and total WOMAC scores were significantly higher in those with bilateral knee OA than those with unilateral knee OA. As an unexpected result, there was no difference in function between the groups. Thus, it can be interpreted that functionality will be significantly affected in both cases in patients with knee OA, whether unilateral or bilateral.

Our study has some limitations. The study sample is relatively small. Since the sample size was insufficient, a group could not be created according to dominant temperament characteristics, and no statistical evaluation could be made. In addition, since an observational study was conducted by taking sections containing a certain period in a long-term disease, it only includes the state within the study period.

## Conclusions

Our study demonstrated a positive correlation between Type D personality and pain, a positive relationship between the total WOMAC score and Type D personality, neuroticism, and psychoticism personality traits, and a positive correlation between the total WOMAC score and cyclothymic and irritable temperament traits. In addition to pharmacological and physical therapy, psychosocial interventions for these domains may help treat OA.

## Ethics Committee Approval

This study approved by the Erzurum Regional Training and Research Hospital Ethics Committee (Date: 07.12.2020, Decision No: 2020/22-214).

## Informed Consent

Prospective study.

## Peer-review

Externally peer-reviewed.

## Authorship Contributions

Concept: A.İ., K.S.; Design: A.İ., K.S.; Supervision: A.İ., K.S.; Fundings: A.İ., K.S.; Materials: K.S.; Data: A.İ., K.S.; Analysis: A.İ.; Literature search: A.İ., K.S.; Writing: A.İ., K.S.;

**Critical revision:** A.İ., K.S.

**Conflict of Interest**

None declared.

## REFERENCES

- Gereau RW 4th, Sluka KA, Maixner W, Savage SR, Price TJ, Murinson BB, et al. A pain research agenda for the 21st century. *J Pain* 2014;15:1203–14. [CrossRef]
- GBD 2017 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017. *Lancet* 2018;392:1789–858. [CrossRef]
- Allen KD, Golightly YM. State of the evidence. *Curr Opin Rheumatol* 2015;27:276–83. [CrossRef]
- Cross M, Smith E, Hoy D, Nolte S, Ackerman I, Fransen M, et al. The global burden of hip and knee osteoarthritis: Estimates from the global burden of disease 2010 study. *Ann Rheum Dis* 2014;73:1323–30. [CrossRef]
- García-Torres F, Castillo-Mayén R. Differences in Eysenck's personality dimensions between a group of breast cancer survivors and the general population. *Int J Environ Res Public Health* 2019;16:1240. [CrossRef]
- Conrad R, Wegener I, Geiser F, Kleiman A. Temperament, character, and personality disorders in chronic pain. *Curr Pain Headache Rep* 2013;17:318. [CrossRef]
- Lundberg G, Anderberg UM, Gerdl B. Personality features in female fibromyalgia syndrome. *J Musculoskelet Pain* 2009;17:117–30. [CrossRef]
- Sánchez-Román S, Téllez-Zenteno JF, Zermeño-Phols F, García-Ramos G, Velázquez A, Derry P, et al. Personality in patients with migraine evaluated with the "Temperament and Character Inventory". *J Headache Pain* 2007;8:94–104. [CrossRef]
- Stockstill JW, Callahan CD. Personality hardiness, anxiety, and depression as constructs of interest in the study of temporomandibular disorders. *J Craniomandib Disord* 1991;5:129–34.
- Gustin SM, Wilcox SL, Peck CC, Murray GM, Henderson LA. Similarity of suffering: Equivalence of psychological and psychosocial factors in neuropathic and non-neuropathic orofacial pain patients. *Pain* 2011;152:825–32. [CrossRef]
- Naylor B, Boag S, Gustin SM. New evidence for a pain personality? A critical review of the last 120 years of pain and personality. *Scand J Pain* 2017;17:58–67. [CrossRef]
- Altman R, Asch E, Bloch D, Bole G, Borenstein G, Brandt K, et al. Development of criteria for the classification and reporting of osteoarthritis. Classification of osteoarthritis of the knee. *Arthritis Rheum* 1986;29:1039–49. [CrossRef]
- Tüzün EH, Eker L, Aytar A, Daşkapan A, Bayramoğlu M. Acceptability, reliability, validity and responsiveness of the Turkish version of WOMAC osteoarthritis index. *Osteoarthritis Cartilage* 2005;13:28–33. [CrossRef]
- Karanci AN, Dirik G, Yorulmaz O. Reliability and validity studies of Turkish translation of Eysenck Personality Questionnaire Revised-Abbreviated. *Turk Psikiyatri Derg [Article in Turkish]* 2007;18:254–61.
- Akiskal HS, Akiskal KK, Haykal RF, Manning JS, Connor PD. TEMPS-A: Progress towards validation of a self-rated clinical version of the Temperament Evaluation of the Memphis, Pisa, Paris, and San Diego Autoquestionnaire. *J Affect Disord* 2005;85:3–16. [CrossRef]
- Vahip S, Kesebir S, Alkan M, Yazici O, Akiskal KK, Akiskal HS. Affective temperaments in clinically-well subjects in Turkey: Initial psychometric data on the TEMPS-A. *J Affect Disord* 2005;85:113–25. [CrossRef]
- Denollet J. DS14: Standard assessment of negative affectivity, social inhibition, and Type D personality. *Psychosom Med* 2005;67:89–97. [CrossRef]
- Ağçelik A, Yıldırım O, Canan F, Eroğlu M, Aktaş G, Savli HA. Preliminary psychometric evaluation of the type D personality construct in Turkish hemodialysis patients. *J Mood Disord* 2012;2:1–5. [CrossRef]
- Keefe FJ, Smith SJ, Buffington AL, Gibson J, Studts JL, Caldwell DS. Recent advances and future directions in the biopsychosocial assessment and treatment of arthritis. *J Consult Clin Psychol* 2002;70:640–55. [CrossRef]
- Zautra AJ, Smith BW. Depression and reactivity to stress in older women with rheumatoid arthritis and osteoarthritis. *Psychosom Med* 2001;63:687–96. [CrossRef]
- Charles ST, Gatz M, Pedersen NL, Dahlberg L. Genetic and behavioral risk factors for self-reported joint pain among a population-based sample of Swedish twins. *Health Psychol* 1999;18:644–54. [CrossRef]
- Davydov DM, Galvez-Sánchez CM, Montoro CI, de Guevara CML, Reyes Del Paso GA. Personalized behavior management as a replacement for medications for pain control and mood regulation. *Sci Rep* 2021;11:20297. [CrossRef]
- García-Torres F, Alós FJ. Eysenck personality questionnaire revised psychoticism predicts motivational-somatic symptoms of depression in breast cancer survivors. *Psychooncology* 2014;23:350–2. [CrossRef]
- Garip Y, Güler T, Bozkurt Tuncer Ö, Önen S. Type D personality is associated with disease severity and poor quality of life in Turkish patients with fibromyalgia syndrome: A cross-sectional study. *Arch Rheumatol* 2019;35:13–9. [CrossRef]
- Erkol İnal E, Demirci K, Dođru A, Şahin M. Ankylosing Spondylitis patients with Type D personality have worse clinical status. *Mod Rheumatol* 2016;26:138–45. [CrossRef]
- Çidem M, Rezvani A, Karacan İ. Assessment of affective temperament in knee osteoarthritis patients and its effects on physical therapy response. *Türkiye Klinikleri J Med Sci* 2011;31:1372–76. [CrossRef]
- Mendlowicz MV, Jean-Louis G, Kelsøe JR, Akiskal HS. A comparison of recovered bipolar patients, healthy relatives of bipolar probands, and normal controls using the short TEMPS-A. *J Affect Disord* 2005;85:147–51. [CrossRef]
- Kesebir S, Vahip S, Akdeniz F, Yüncü Z, Alkan M, Akiskal H. Affective temperaments as measured by TEMPS-A in patients with bipolar I disorder and their first-degree relatives: A controlled study. *J Affect Disord* 2005;85:127–33. [CrossRef]
- Carman WJ. Factors associated with pain and osteoarthritis in the Tecumseh Community Health Study. *Semin Arthritis Rheum* 1989;18:10–3. [CrossRef]
- Davis MA, Ettinger WH, Neuhaus JM, Barclay JD, Segal MR. Correlates of knee pain among US adults with and without radiographic knee osteoarthritis. *J Rheumatol* 1992;19:1943–9.
- Lichtenberg PA, Swensen CH, Skehan MW. Further investigation of the role of personality, lifestyle and arthritic severity in predicting pain. *J Psychosom Res* 1986;30:327–37. [CrossRef]
- Lee J, Song J, Hootman JM, Semanik PA, Chang RW, Sharma L, et al. Obesity and other modifiable factors for physical inactivity measured by accelerometer in adults with knee osteoarthritis. *Arthritis Care Res (Hoboken)* 2013;65:53–61. [CrossRef]
- Somers TJ, Keefe FJ, Pells JJ, Dixon KE, Waters SJ, Riordan PA, et

- al. Pain catastrophizing and pain-related fear in osteoarthritis patients: Relationships to pain and disability. *J Pain Symptom Manage* 2009;37:863–72. [CrossRef]
34. Altındağ Ö, Sırmatel Ö, Tabur H. Demographic features and relation with clinical parameters in patients with knee osteoarthritis. *Harran Üniv Tıp Fak Derg [Article in Turkish]* 2006;3:62–6.
33. Somers TJ, Keefe FJ, Pells JJ, Dixon KE, Waters SJ, Riordan PA, et al. Pain catastrophizing and pain-related fear in osteoarthritis patients: Relationships to pain and disability. *J Pain Symptom Manage* 2009;37:863–72. [CrossRef]
34. Altındağ Ö, Sırmatel Ö, Tabur H. Demographic features and relation with clinical parameters in patients with knee osteoarthritis. *Harran Üniv Tıp Fak Derg [Article in Turkish]* 2006;3:62–6.

### Diz Osteoartritli Hastalarda Kişilik ve Mizaç Özelliklerinin Ağrı ve Fonksiyonla İlişkisi

**Amaç:** Diz osteoartritli hastalarda kişilik ve mizaç tipleri ile işlevsellik ve hissedilen ağrı arasındaki ilişkiyi inceleyen az sayıda çalışma bulunmaktadır. Bu çalışmada diz osteoartritli hastalarda kişilik ve mizaç özellikleri ile ağrı ve fonksiyon arasındaki ilişkinin belirlenmesi amaçlandı.

**Gereç ve Yöntem:** Çalışmaya dahil edilme kriterlerini karşılayan diz osteoartrit tanısı alan 126 hasta dahil edildi. Kişilik değerlendirmesi için Eysenck Kişilik Anketi Revize Edilmiş Kısa Formu (EPQR-S) ve D Tipi Kişilik Ölçeği (DS-14), mizaç değerlendirmesi için Memphis, Pisa ve San Diego Mizaç Değerlendirmesi Anketi (TEMPS-A) kullanıldı. OA ağrısı ve genel fonksiyon değerlendirmesi için Western Ontario ve McMaster Üniversiteleri Osteoartrit İndeksi (WOMAC) kullanıldı.

**Bulgular:** Katılımcıların 58'i (%46) D Tipi kişilik özellikleri gösterirken, 18'inde (%14.3) depresif mizaç, 12'sinde (%9.5) sınırlı mizaç ve 16'sında (%17.3) endişeli mizaç baskındı. D Tipi kişiliğe sahip olanlar daha kötü işlevlere sahipti ve D Tipi kişilik, ağrı ve toplam WOMAC puanı ile pozitif olarak ilişkiliydi. Toplam WOMAC puanı, nevrozizm ve psikotizm kişilik özellikleri ve siklotimik ve sınırlı mizaç özellikleri ile pozitif bir korelasyon gösterdi.

**Sonuç:** Bu çalışma, diz osteoartritli hastalarda ağrı ve toplam WOMAC skorunun kişilik ve mizaç özellikleri ile ilişkili olduğunu göstermektedir. Farmakolojik ve fizik tedaviye ek olarak, bu alanlara yönelik müdahaleler faydalı olabilir.

**Anahtar Sözcükler:** Ağrı; fonksiyon; kişilik; mizaç; osteoartrit.