The Relationships between Personality Disorders and Early Maladaptive Schemas and the Moderating Role of Gender

ABSTRACT

Objective: The aims of this study were to examine the relationship between personality disorders (PDs) and early maladaptive schemas, to determine the early maladaptive schemas that predict PDs, and to investigate the moderating role of gender in the relationship between PDs and early maladaptive schemas.

Methods: The sample consisted of 654 participants, 368 (56.4%) women and 286 (43.6%) men, aged 18-75 years, determined by the convenience sampling method. Data were collected using Coolidge Axis II Inventory Plus Turkish Short Form and Young Schema Questionnaire-Short Form 3.

Results: From regression analysis, it was determined that each PD had a specific early maladaptive schema profile. According to the analysis, the schema that predicts the most for paranoid, schizotypal, schizoid, antisocial, borderline, obsessive-compulsive, and avoidant PDs is social isolation/mistrust; for histrionic and narcissistic PDs, the schema is approval seeking, and for dependent PD, it is failure. The analysis related to the moderating role of gender indicated that for women, the emotional deprivation schema is a risk factor for paranoid PD, and the schemas of self-sacrifice, punitiveness, and unrelenting standards are the risk factors for avoidant PD.

Conclusion: This study discovered that some early maladaptive schemas were predictors of PDs and that gender had a moderating role in the relationship between these variables. It is thought that paying attention to the moderating role of gender and considering the specific schema profiles of each PD will be beneficial for intervention programs for early maladaptive schemas and understanding the etiology of PDs.

Keywords: Personality disorders, schema therapy, sex

Introduction

Personality disorders (PDs) are defined as permanent, inelastic, and long-term life patterns that impair functionality and impact areas of cognition, interpersonal relationships, or impulse control. It is accepted that the symptoms seen in PDs are associated with the activation of early maladaptive schemas, which have a complex structure and lead to chronic dysfunction in many areas of life. Early maladaptive schemas, formed as a result of the interaction between early childhood experiences and temperament, occur as a result of not meeting basic needs or because of negative experiences in childhood. As negative experiences are repeated, schemas which help a person better understand themselves, other people, and the world, become rigid and resistant to change. It has been suggested that these schemas, which become disharmonious by losing their functionality, lie at the core of PDs that occur in adulthood.

Young et al noticed that early maladaptive schemas affecting a person’s cognition, emotions, and social interaction also interrupt the therapy process. He found that, in addition to depression, his clients had PDs, and he preferred to define the self in parts that interacted

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with each other functionally rather than consider it as a whole.\textsuperscript{2,7} By observing his patients, Young et al\textsuperscript{1} identified a total of 18 subschemas under five schema domains, which he claimed were associated with PDs.

It is seen in the literature that the number of studies supporting Young et al\textsuperscript{3} claim that early maladaptive schemas are predictors of PDs has increased in recent years.\textsuperscript{8-18} In most of these studies, the relationship between the schemas and borderline PDs was investigated.\textsuperscript{9,13,16-17} When the studies in the literature are examined, it is seen that in some studies the relationship between PDs and early maladaptive schemas has been examined,\textsuperscript{11,12,18-20} and in others, certain PDs have been compared in terms of early maladaptive schemas.\textsuperscript{14,16} Moreover, some studies were conducted with control groups included in the clinical studies.\textsuperscript{8,13,16,17,21} When the aforementioned studies were examined, it was found that PDs were associated with at least one schema and that the schemas between the clinical sample and the control group differed. On the other hand, in the single study conducted in Turkey examining the relationship between PDs and early schemas, it was found that the early maladaptive schema scores of the sample group diagnosed with antisocial PD were significantly higher than the scores of the healthy sample group. There are also studies in the literature, in addition to these associative or comparative studies, that show that schema therapy is effective in PDs.\textsuperscript{12,22-25} These studies that show the therapeutic effect of schema therapy on PDs also provide evidence of the link between PDs and early schemas in the field of clinical intervention.

In addition to the effects of gender with environmental factors on personality development,\textsuperscript{26} it is also known that gender is associated with PDs and early maladaptive schemas.\textsuperscript{27,28} In addition to the different results seen in the literature, it has been determined that both PDs\textsuperscript{29-31} and early maladaptive schemas\textsuperscript{16,19,34-36} show differences according to gender. For example, in a study conducted by Barnow et al,\textsuperscript{32} it was found that antisocial PD in men and avoidant PD in women are seen at high rates, whereas other studies have found narcissistic PD at high rates in men.\textsuperscript{30,32} In a study by Samuels et al,\textsuperscript{33} it was determined that clusters A and B PDs are more common in men compared with women. In a study that examined early maladaptive schemas in terms of gender,\textsuperscript{19} the abandonment schema was observed more frequently in men, whereas other schemas showed no difference in terms of gender. In another study, while emotional deprivation, social isolation, and mistrust schema scores were higher in women than men,\textsuperscript{22} in Khodarahimi’s\textsuperscript{15} study, it was found that mistrust and emotional inhibition schemas were higher in women than men.

In line with the claims and findings presented in the studies in the literature on the relationships between PDs, early maladaptive schemas, and gender, our study aimed to (1) determine the relationships between early maladaptive schemas and all PDs in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5),\textsuperscript{1} (2) determine to what extent which early maladaptive schemas predict which PDs, and (3) examine the moderating role of gender in the relationship between these two variables (Figure 1).

**Methods**

**Participants**

The sample consisted of 654 participants aged between 18-75 years, of which 368 were women (56.4%) and 286 were men (43.6%). The average age of the participants in the sample was 33.23 (SD = 11.84) years (31.72 [SD = 11.39] for women; 35.17 [SD = 12.14] for men). Overall, 19.9% of the participants (n = 130) had primary education, 28% (n = 183) had high school education, and 52.1% (n = 340) had university or a higher level of education; 47% (n = 306) were single, 49.5% (n = 322) were married, 2.5% (n = 16) were separated from their spouses, and 1.1% (n = 7) were widowed; and 6.5% (n = 42) had low income, 86.9% (n = 566) had medium income, and 6.6% (n = 43) had high income. The data were collected between November 2019 and April 2020 from a sample of the population selected using the easy sampling method according to the accessibility-availability principle.

The ethics committee permission for this study was obtained from Istanbul Sabahattin Zaim University’s Ethics Committee, dated October 31, 2019, and numbered 2019/09.

**Data Collection Tools**

**Demographic Information Form**

This form contains information about the participants’ age, gender, educational status, marital status, and socioeconomic status.

**Coolidge Axis II Inventory Plus Turkish Short Form**

The scale was developed into a short form\textsuperscript{28} to measure DSM-5 PDs based on the Coolidge Axis II Inventory Plus Turkish Form (CATI+TR), whose Turkish validity and reliability study was conducted by Bilge and Berk.\textsuperscript{19} The scale is a 4-point Likert-type scale (1 = absolutely false, 4 = absolutely true) and consists of 78 items and 10 subscales. In the test-retest study of the scale, correlation coefficients were found to be between 0.77 and 0.89. The Cronbach alpha coefficients of the subscales were between 0.66 and 0.77. In the convergent validity analysis, the correlation coefficients between the CATI+TR+SF subscales and the Personality Belief Questionnaire-Turkish Short Form subscales ranged between 0.35 and 0.64 and between 0.27 and 0.78 for the SCID-II-Personality Questionnaire subscales. In the differential validity analysis, it was determined that CATI+TR+SF PDs’ scores were significantly higher in favor of the clinical sample, and CATI+TR significantly differentiated the clinical and community sam-
In our study, reliability coefficients for the CATI+TR-SF subscales were determined to be between 0.65 and 0.74.

**Young Schema Questionnaire-Short Form 3**
The Turkish validity and reliability study of the scale developed by Young et al. was conducted by Soygüt et al. The scale is a 6-point Likert-type scale (1 = completely wrong for me, 6 = defines me perfectly) and consists of 90 questions. In the Turkish adaptation of the scale, five schema areas and 14 subschemas were determined. Test-retest reliability correlation coefficients were determined to be between 0.66 and 0.83 for schema areas and between 0.66 and 0.82 for the subschemas. Internal consistency coefficients were determined as 0.53-0.81 for the schema areas and 0.63-0.80 for the subschemas. In our study, the reliability coefficients for the Young Schema Questionnaire-Short Form-3 subschemas were found to range between 0.66 and 0.78.

**Statistical Analysis**
The Pearson product-moment correlation coefficient analysis was used to examine the relationship between PDs and early maladaptive schemas; multiple linear regression analysis with the stepwise method was used to determine the predictive level of early maladaptive schemas for PDs; and Model 1 in the PROCESS Macro v.3.4 program was used to determine the moderating role of gender among the variables. The IBM Statistical Package for the Social Sciences v.25 (IBM Corp.; Armonk, NY, USA) program was used for analysis.

**Results**

**Correlation Analysis Results of PDs and Early Maladaptive Schemas**
As a result of the analysis conducted to examine the relationships between PDs and early maladaptive schemas, it was found that, except for the insignificant relationships between schizoid PD and approval seeking and abandonment schemas, all PDs and early maladaptive schemas had a significant and positive relationship in terms of results with different values of coefficients (Table 1).

**Regression Analysis Results on the Predictive Effect of Early Maladaptive Schemas on PDs**
On the basis of the results of the analysis conducted to determine the level at which early maladaptive schemas predict PDs, the values of early maladaptive schemas and the total R² values of the schemas that predict PDs are given in Table 2. From paranoid PD (β = −0.39; R² = 0.34), schizotypal PD (β = 0.35; R² = 0.29), schizoid PD (β = 0.32; R² = 0.23), antisocial PD (β = 0.21; R² = 0.21), borderline PD (β = 0.21; R² = 0.28), obsessive-compulsive PD (β = 0.19; R² = 0.29), and avoidant PD (β = 0.14; R² = 0.27), it was determined that the most predictive schema was the “social isolation/mistrust” schema. For the histrionic (β = 0.45; R² = 0.31) and narcissistic (β = 0.38; R² = 0.31) PDs, the most predictive schema was the “approval seeking” schema. As for the dependent PD (β = 0.27; R² = 0.30), the “failure” schema was determined as the most predictive schema.

**Findings Regarding the Regulatory Role of Gender between PDs and Early Maladaptive Schemas**
As a result of the analysis conducted using Model 1 to determine the moderating role of gender on the relationship between PDs and early maladaptive schemas, it was determined that gender does have a moderating role in the relationship between some PDs and early maladaptive schemas. The relationship between the variables is shown in Figure 2. According to the results of the analysis, in women, while the emotional deprivation schema (F = 45.579, R² = 0.17) is

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**Table 1. The Correlation Coefficients between Mean Points of Schema and Personality Disorders**

|                | Par.   | Stp.   | Shd.   | Ant.   | Bdl.   | Hst.   | Nrs.   | Ocb.   | Avo.   | Dep.   |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Emotional dep. | 0.39a  | 0.41a  | 0.35a  | 0.36a  | 0.39a  | 0.14a  | 0.22a  | 0.35a  | 0.39a  | 0.39a  |
| Failure        | 0.35a  | 0.37a  | 0.33a  | 0.31a  | 0.39a  | 0.21a  | 0.20a  | 0.36a  | 0.50a  | 0.55a  |
| Pessimism      | 0.48a  | 0.42a  | 0.27a  | 0.36a  | 0.50a  | 0.34a  | 0.33a  | 0.50a  | 0.51a  | 0.48a  |
| Social iso./mistrust | 0.59a  | 0.54a  | 0.48a  | 0.46a  | 0.53a  | 0.31a  | 0.34a  | 0.54a  | 0.52a  | 0.52a  |
| Emotional inhibition | 0.38a | 0.42a  | 0.46a  | 0.36a  | 0.35a  | 0.17a  | 0.22a  | 0.44a  | 0.45a  | 0.39a  |
| Approval seeking | 0.43a | 0.20a  | 0.03   | 0.25a  | 0.37a  | 0.56a  | 0.55a  | 0.37a  | 0.33a  | 0.26a  |
| Enmesh./depend. | 0.41a  | 0.41a  | 0.30a  | 0.36a  | 0.46a  | 0.31a  | 0.30a  | 0.44a  | 0.51a  | 0.55a  |
| Entitlement /ins. S elf. | 0.46a  | 0.35a  | 0.18a  | 0.36a  | 0.41a  | 0.42a  | 0.44a  | 0.43a  | 0.27a  | 0.25a  |
| Self-sacrifice | 0.36a  | 0.16a  | 0.04   | 0.15a  | 0.22a  | 0.22a  | 0.20a  | 0.26a  | 0.22a  | 0.25a  |
| Abandonment    | 0.39a  | 0.38a  | 0.31a  | 0.36a  | 0.46a  | 0.32a  | 0.32a  | 0.40a  | 0.48a  | 0.52a  |
| Punitiveness   | 0.33a  | 0.18a  | 0.10a  | 0.13a  | 0.20a  | 0.23a  | 0.26a  | 0.29a  | 0.25a  | 0.18a  |
| Defectiveness  | 0.33a  | 0.45a  | 0.39a  | 0.40a  | 0.42a  | 0.18a  | 0.21a  | 0.38a  | 0.48a  | 0.53a  |
| Vulnerability to harm | 0.49a  | 0.33a  | 0.27a  | 0.39a  | 0.44a  | 0.41a  | 0.42a  | 0.45a  | 0.44a  | 0.41a  |
| Unrelenting standards | 0.36a | 0.17a  | 0.08a  | 0.26a  | 0.27a  | 0.39a  | 0.42a  | 0.32a  | 0.19a  | 0.14a  |

**Abbreviations:** Par., paranoid; Stp., schizotypical; Shd., schizoid; Ant., antisocial; Bdl., borderline; Hst., histrionic; Nrs., narcissistic; Ocb., obsessive-compulsive; Avo., avoidant; Dep., dependent; Emotional dep., emotional deprivation; Social iso./mistrust, social isolation and mistrust; Enmesh./depend., enmeshment and dependence; Entitlement/ins. Self., entitlement and insufficient self-control.

a \( P < 0.01 \).

b \( P < 0.05 \).
Table 2. Regression Analysis Results of the Effect of Early Maladaptive Schemas on Personality Disorders (PDs)

| PD and predictor variables | B    | SH   | β    | t    | R²   | ΔF   | ΔR²  |
|----------------------------|------|------|------|------|------|------|------|
| Paranoid PD                |      |      |      |      |      |      |      |
| Social isolation/mistrust  | 0.29 | 0.03 | 0.39 | 10.46 | 0.342 | 118.44* | 0.418 |
| Approval seeking           | 0.10 | 0.03 | 0.13 | 3.43  | 0.053 |       |      |
| Entitlement/insufficient self-control | 0.11 | 0.03 | 0.15 | 4.00  | 0.014 |       |      |
| Vulnerability to harm      | 0.13 | 0.04 | 0.13 | 3.35  | 0.009 |       |      |
| Schizotypical PD           |      |      |      |      |      |      |      |
| Social isolation/mistrust  | 0.23 | 0.03 | 0.35 | 7.86  | 0.291 | 105.98* | 0.315 |
| Defectiveness              | 0.17 | 0.04 | 0.19 | 4.69  | 0.018 |       |      |
| Entitlement/insufficient self-control | 0.09 | 0.02 | 0.15 | 4.05  | 0.006 |       |      |
| Schizoid PD                |      |      |      |      |      |      |      |
| Social isolation/mistrust  | 0.20 | 0.03 | 0.32 | 7.98  | 0.228 | 126.20* | 0.279 |
| Emotional inhibition       | 0.23 | 0.03 | 0.28 | 6.84  | 0.051 |       |      |
| Antisocial PD              |      |      |      |      |      |      |      |
| Social isolation/mistrust  | 0.16 | 0.04 | 0.21 | 4.27  | 0.211 | 60.89* | 0.268 |
| Entitlement/insufficient self-control | 0.13 | 0.03 | 0.18 | 4.54  | 0.027 |       |      |
| Defectiveness              | 0.18 | 0.05 | 0.18 | 4.01  | 0.024 |       |      |
| Vulnerability to harm      | 0.11 | 0.04 | 0.11 | 2.61  | 0.006 |       |      |
| Borderline PD              |      |      |      |      |      |      |      |
| Social isolation/mistrust  | 0.17 | 0.04 | 0.21 | 4.59  | 0.280 | 79.31* | 0.375 |
| Pessimism                  | 0.17 | 0.05 | 0.16 | 3.78  | 0.047 |       |      |
| Entitlement/insufficient self-control | 0.14 | 0.03 | 0.18 | 4.98  | 0.021 |       |      |
| Abandonment                | 0.16 | 0.05 | 0.13 | 3.07  | 0.019 |       |      |
| Enmeshment/dependence      | 0.10 | 0.03 | 0.13 | 3.06  | 0.008 |       |      |
| Histrionic PD              |      |      |      |      |      |      |      |
| Approval seeking           | 0.31 | 0.03 | 0.45 | 10.63 | 0.311 | 75.55* | 0.363 |
| Abandonment                | 0.13 | 0.03 | 0.13 | 4.03  | 0.020 |       |      |
| Unrelenting standarts      | 0.16 | 0.04 | 0.15 | 3.83  | 0.016 |       |      |
| Punitiveness               | -0.09| 0.03 | -0.14| -3.61 | 0.008 |       |      |
| Entitlement/insufficient self-control | 0.08 | 0.03 | 0.12 | 3.02  | 0.008 |       |      |
| Narcissistic PD            |      |      |      |      |      |      |      |
| Approval seeking           | 0.34 | 0.04 | 0.38 | 8.69  | 0.305 | 77.71* | 0.370 |
| Unrelenting standards      | 0.26 | 0.06 | 0.18 | 4.72  | 0.022 |       |      |
| Vulnerability to harm      | 0.19 | 0.04 | 0.16 | 4.25  | 0.018 |       |      |
| Entitlement/insufficient self-control | 0.11 | 0.03 | 0.13 | 3.20  | 0.007 |       |      |
| Punitiveness               | -0.11| 0.04 | -0.12| -3.11 | 0.008 |       |      |
| Obsessive compulsive PD    |      |      |      |      |      |      |      |
| Social isolation/mistrust  | 0.14 | 0.04 | 0.19 | 4.11  | 0.286 | 82.64* | 0.385 |
| Pessimism                  | 0.20 | 0.04 | 0.20 | 5.00  | 0.050 |       |      |
| Entitlement/insufficient self-control | 0.12 | 0.03 | 0.16 | 4.53  | 0.028 |       |      |
| Emotional inhibition       | 0.15 | 0.04 | 0.15 | 3.93  | 0.017 |       |      |
| Vulnerability to harm      | 0.11 | 0.04 | 0.12 | 2.92  | 0.007 |       |      |
| Avoidant PD                |      |      |      |      |      |      |      |
| Social isolation/mistrust  | 0.10 | 0.03 | 0.14 | 3.22  | 0.271 | 74.47* | 0.403 |
| Failure                    | 0.16 | 0.04 | 0.19 | 4.54  | 0.071 |       |      |
| Pessimism                  | 0.16 | 0.04 | 0.17 | 4.12  | 0.030 |       |      |
| Enmeshment/dependence      | 0.09 | 0.03 | 0.13 | 3.05  | 0.015 |       |      |
| Emotional inhibition       | 0.13 | 0.04 | 0.13 | 3.40  | 0.009 |       |      |
| Approval seeking           | 0.07 | 0.03 | 0.10 | 2.88  | 0.007 |       |      |
| Dependent PD               |      |      |      |      |      |      |      |
| Social isolation/mistrust  | 0.11 | 0.03 | 0.17 | 3.95  | 0.012 | 122.37* | 0.426 |
| Failure                    | 0.24 | 0.03 | 0.27 | 6.85  | 0.304 |       |      |
| Abandonment                | 0.20 | 0.04 | 0.19 | 4.68  | 0.084 |       |      |
| Social isolation/mistrust  | 0.13 | 0.03 | 0.18 | 4.57  | 0.026 |       |      |
| Enmeshment/dependence      | 0.11 | 0.03 | 0.17 | 3.95  | 0.012 |       |      |

*p < 0.001.
associated with an increase in paranoid PD, self-sacrifice (F = 14.695, R² = 0.08), and unrelenting standards (F = 12.424, R² = 0.05) schemas were found to be associated with increases in avoidant PD (P < 0.001; Table 3).

### Discussion

This study aimed to determine the relationships between early maladaptive schemas and PDs in DSM-5 to determine which early, maladaptive schemas predicted which PDs at what level and to examine the moderating role of gender in the relationship between these two variables.

As a result of the analysis done for the first purpose, positive and significant relationships between different coefficients were found for all PDs and all early maladaptive schemas, except for approval seeking abandonment with schizoid PD. On the other hand, the lack of a relationship between schizoid PD and approval seeking and abandonment schemas can be explained by the characteristics of this PD given in the DSM-5 diagnostic criteria, such as disregarding praise or satire and preferring to be solitary and far from close relationships.

However, when these relationships are evaluated in terms of the dimensional approach that treats personality and disorders as a continuum, it is expected that early maladaptive schemas have a certain relationship with PDs. At this point, regression analyses were also made to determine the schemas that show predictive features in the emergence of each PD beyond determining the relationships seen, and as a result of these analyses, each PD’s unique maladaptive schema profiles were formed. When these profiles, which contain both common and different schemas, were examined, it was found that the schema that predicted paranoid, schizotypal, schizoid, antisocial, borderline, obsessive-compulsive, and avoidant PD the best was social isolation/mistrust. The social isolation/mistrust schema may occur as a result of domestic abuse, exposure to peer bullying, or humiliation during childhood or adolescence. People with this schema are often anxious and skeptical that other people might manipulate them for their own benefit. In addition, situations such as not belonging to a place or feeling alienated and seeing oneself as different from other people are characteristic of people with this schema. Accordingly, it can be thought that interpersonal problems and maladaptive behaviors in these PDs are related to problems related to trust and reliability in social relationships, neglect, exploitation, and childhood abuse. The schema that best predicts histrionic PD and narcissistic PD is approval seeking. This schema is often the result of parents’ excessive and persistent expectations about socially accepted behaviors. Social acceptance, appearance, and status are very important for people with this schema, and behaviors aimed at gaining the approval and appreciation of other people are seen in these people. It can be thought that the chronic need for the approval of others to feel valuable is related to the demands such as being the center of attention and being admired, which is the diagnostic criterion of these two PDs. The schema that best predicted the dependent PD was determined as failure. The failure schema often develops in a family environment where there is excessive criticism of success. Hypersensitivity to criticism of self-worth is observed in people with this schema. It can be said that having this schema causes individuals to see themselves as unsuccessful, incompetent, and unskilled, to show submissive and clingy behaviors, and to feel a need for attention, which leads to fears of separation. The fact that the results obtained in this study are similar to those of the studies in the literature, that is, the level at which PDs predict similar schemas, is one of the reasons for the overlap of many characteristics of PDs and the high rate of comorbidity. It gives rise to the idea that they can be regarded as “core maladaptive schemas” that lie in the background of PDs. As a result of the analysis, it was determined that the other predictive schemas following the schemas that predict the PDs in a common way came together in different combinations and created schema profiles specific to each PD. It can be said that the schema profile specific to each PD is descriptive and distinctive in causal terms. When the correlation and regression analysis results are evaluated, it is seen that Young et al’s claim that the activation of early maladaptive schemas, which include rigid and inflexible beliefs about the self, others, and the world, is effective in the emergence of symptoms seen in PDs, and his claim is confirmed.

### Table 3. Findings Related to Moderation Role of Gender between Personality Disorders and Early Maladaptive Schemas

|                      | Coeff. | SE  | P      | LLCI  | ULCI  | F    | R²  |
|----------------------|--------|-----|--------|-------|-------|------|-----|
| **Paranoid PD**      |        |     |        |       |       |      |     |
| Constant             |        |     |        |       |       |      |     |
| ED                   | 17.55  | 0.18| < 0.01 | 17.21 | 17.90 | 45.579* | 0.17 |
| Gender               |        |     |        |       |       |      |     |
| ED x gender          | -1.17  | 0.35| < 0.01 | -1.88 | -0.49 |      |     |
| Avoidant PD          |        |     |        |       |       |      |     |
| Constant             |        |     |        |       |       |      |     |
| SS                   | 18.12  | 0.18| < 0.01 | 17.76 | 18.48 | 14.695* | 0.06 |
| Gender               |        |     |        |       |       |      |     |
| SS x gender          | -0.81  | 0.37| < 0.01 | -1.53 | -0.08 |      |     |
| Avoidant PD          |        |     |        |       |       |      |     |
| Constant             |        |     |        |       |       |      |     |
| PN                   | 18.17  | 0.18| < 0.01 | 17.81 | 18.52 | 18.730* | 0.08 |
| Gender               |        |     |        |       |       |      |     |
| PN x gender          | -1.01  | 0.36| < 0.01 | -1.73 | -0.29 |      |     |
| Avoidant PD          |        |     |        |       |       |      |     |
| Constant             |        |     |        |       |       |      |     |
| US                   | 18.18  | 0.18| < 0.01 | 17.82 | 18.55 | 12.424* | 0.05 |
| Gender               |        |     |        |       |       |      |     |
| US x gender          | -0.17  | 0.37| < 0.01 | -1.80 | -0.34 |      |     |

Abbreviations: ED, emotional deprivation; SS, self-sacrifice; PN, punitiveness; US, unrelenting standards; Coeff., coefficients; SE, standard error; LLCI, low limit confidence interval; ULCI, upper limit confidence interval.

*P < 0.001.
In the analysis on the moderating role of gender in the relationship between PDs and early maladaptive schemas, it was found that in women the risk of paranoid PD increases related to emotional deprivation schema, and the risk of avoidant PD increases related to self-sacrifice, punitiveness, and unrelenting standards schemas. The emotional deprivation schema develops as a result of not meeting the basic needs of the person both physically and emotionally. Accordingly, it can be said that the emotional deprivation schema is the basis of the development of paranoid PD, which is dominated by the fear of being harmed by other people, especially present in women, as they are known to have high levels of anxiety disorders.43, 44 Similarly, it can be thought that one of the factors that increases the likelihood of avoidant PD occurring in women is the factor of gender. In addition, according to the results obtained, it can be determined that self-sacrifice, punitiveness, and unrelenting standards schemas increase the risk of avoidant PD in women. The self-sacrifice schema often develops in environments of conditional positive respect and conditional positive acceptance, and meeting the needs of others is a priority for people with this schema.41 Unrelenting standards and punitiveness schemas develop mostly in environments where there are strict rules and emotions are suppressed. It is seen that these schemas develop through social learning, especially depending on parental attitudes, and people with these schemas exhibit their excessively critical attitudes and pressures against both themselves and other people.1 In this context, it can be said that in families with strict rules, high standards, conditional positive respect, and acceptance, the risk of developing avoidant PD increases in women with the fear of punishment and also with the effect of genetic factors and gender roles.

In conclusion, the findings obtained in our study showed that some early maladaptive schemas are predictors for PDs, and therefore, for each PD, there is a specific early maladaptive schema profile, and gender has a moderating role in the relationship between these two variables. The most important limitation of this study was that the data were collected through self-report scales, and a clinical sample was not included. It should be noted that the repetition of the study, with different sample and clinical groups, will form an evidence-based platform for clinical interventions on this issue. The strengths of the study, which can be seen as being of pioneering quality for Turkey, are the large sample population used and the inclusion of all PDs in DSM-5. Although there are studies in the literature investigating the relationship between PDs and early maladaptive schemas and examining them according to gender, there are no previous studies on the moderating role of gender in the relationship between these two variables. Consequently, we believe that the results obtained from this study will contribute to the literature, and considering the gender factor as well as the early maladaptive schema profiles will be beneficial in the treatment of PDs.

References
1. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. American Psychiatric Association; 2013. [Crossref]
2. van Vreeswijk M, Broersen J, Nadort M. The Wiley-Blackwell Handbook of Schema Therapy Theory, Research and Practice. 1st ed. Wiley-Blackwell; 2012. [Crossref]
3. Young JE, Klosko JS, Wiersma AE. Schema Therapy a Practitioner’s Guide. The Guilford Press; 2003.
4. Alford BA, Beck AT. The Integrative Power of Cognitive Therapy. The Guilford Press; 1997. [Crossref]
5. Soygüt G, Karaosmanoğlu A, Çakır Z. Erken dönemde uymusuz şemaların değerlendirilmesi. Young Şema Öğçesi Klasik 3. 2009;20:75-84.
6. Stevens BA, Roediger E. Breaking Negative Relationship Patterns a Schema Therapy Self-Help and Support Book. 1st ed. Wiley-Blackwell; 2017. [Crossref]
7. Roediger E. Şema Terapi Nedir? Şema Terapinin Temellerine, Modellerine ve Uygulamalarına Giriş. Nobel Akademik Yayıncılık; 2015.
8. Bach B, Farrell, JM. Schemas and modes in borderline personality disorder: the mistrustful, shameful, angry, impulsive, and unhappy child. Psychol Res. 2018;259:323-329. [Crossref]
9. Esmaeilian N, Dehghani M, Koster EHW, et al. Early maladaptive schemas and borderline personality disorder features in a nonclinical sample: a network analysis. Clin Psychol Psychother. 2019;26(3):388-398. [Crossref]
10. Flink N, Honkalampi K, Lehto SM, et al. Comparison of early maladaptive schemas between borderline personality disorder and chronic depression. Clin Psychol Psychother. 2018;25(4):532-539. [Crossref]
11. Gilbert F, Daffern M. The association between early maladaptive schema and personality disorder traits in an offender population. Psychol Crime Law. 2013;19(10):933-946. [Crossref]
12. Nordahl HM, Nysaeter TE. Schema therapy for patients with borderline personality disorder: a case series. J Behav Ther Exp Psychiatry. 2005;36(3):254-264. [Crossref]
13. Shorey RC, Anderson S, Stuart GL. The relation between antisocial and borderline personality symptoms and early maladaptive schemas in a treatment seeking sample of male substance users. Clin Psychol Psychother. 2014;21(4):341-351. [Crossref]
14. Jovev M, Jackson HJ. Early maladaptive schemas in personality disorder individuals. J Pers Disord. 2004;18(5):467-478. [Crossref]
15. Kunst H, Lobbestael J, Candel I, et al. Early maladaptive schemas and their relation to personality disorders: a correlational examination in a clinical population. Clin Psychol Psychother. 2020;27(6):837-846. [Crossref]
16. Khodarahimi S. Early maladaptive schemas in individuals with and without B cluster personality disorders. Current Issues in Personality Psychology. 2017;5(4):260-271. [Crossref]
17. Lawrence KA, Allen JS, Chanen AM. A study of maladaptive schemas and borderline personality disorder in young people. Cogn Ther Res. 2011;35:30-39. [Crossref]
18. Parveen H, Shetnazi H, Riaz MN, et al. Effect of early maladaptive schemas on personality disorders, internalizing psychological disorders and well-being among adults. Int J Rehabil Sci. 2017;6:33-36.
19. Carr SN, Francis AJ. Early maladaptive schemas and personality disorder symptoms: an examination in a non-clinical sample. *Psychol Psychother*. 2010;83(4):333-349. [Crossref]

20. Corral C, Calvete E. Early maladaptive schemas and personality disorder traits in perpetrators of intimate partner violence. *Span J Psychol*. 2014;17:1-10. [Crossref]

21. Özdel K, Türkçapar MH, Guriz SO, et al. Early maladaptive schemas and core beliefs in antisocial personality disorder. *Int J Cogn Ther*. 2015;8(4):306-317. [Crossref]

22. Dickhaut V, Arntz A. Combined group and individual schema therapy for borderline personality disorder: a pilot study. *J Behav Ther Exp Psychiatry*. 2014;45(2):242-251. [Crossref]

23. Farrell JM, Shaw IA, Webber MA. A schema-focused approach to group psychotherapy for outpatients with borderline personality disorder: a randomized controlled trial. *J Behav Ther Exp Psychiatry*. 2009;40(2):317-328. [Crossref]

24. Tan YM, Lee CW, Averbeck LE, et al. Schema therapy for borderline personality disorder: a qualitative study of patients’ perceptions. *PloS One*. 2018;13(11):e0206039. [Crossref]

25. Wetzelaer P, Farrell J, Evers SM, et al. Design of an international multi-centre RCT on group schema therapy for borderline personality disorder. *BMC Psychiatry*. 2014;14:319. [Crossref]

26. Paris J. Gender differences in personality traits and disorders. *Curr Psychiatry Rep*. 2004;6(1):71-74. [Crossref]

27. Jang KL, Livesley WJ, Vernon PA. A twin study of genetic and environmental contributions to gender differences in traits delineating personality disorder. *Eur J Pers*. 1998;12:331-344. [Crossref]

28. Farrell JM, Reiss N, Shaw IA. The Schema Therapy Clinician’s Guide a Complete Resource for Building and Delivering Individual, Group and Integrated Schema Mode Treatment Programs. 1st ed. Wiley-Blackwell; 2014. [Crossref]

29. Barnow S, Herpertz SC, Spitzer C, et al. Temperament and character in patients with borderline personality disorder taking gender and comorbidity into account. *Psychopathology*. 2007;40(6):369-378. [Crossref]

30. Lindsay KA, Widiger TA. Sex and gender bias in self-report personality disorder inventories: item analyses of the MCMI-II, MMPI, and PDQ-R. *J Pers Asses*. 1995; 65(1):1-20. [Crossref]

31. Morey LC, Warner MB, Boggs CD. Gender bias in the personality disorders criteria: an investigations of five bias indicators. *J Psychopathol Behav Assess*. 2002;24:55-65. [Crossref]

32. Torgersen S, Kringlen E, Cramer V. The prevalence of personality disorders in a community sample. *Arch Gen Psychiatry*. 2001;58(6):590-596. [Crossref]

33. Öztunç H, Bilge Y, Bilge Y. Kişilik bozuklukları ile gelir ve cinsiyet değişkenlerinin ilişkisinin incelenmesi. *YDU Sosbild.* 2015;8(1):63-82.

34. El-Gilany AH, El-Bilsha MA, Ibrahim A. Gender differences in mal-adaptive cognitive schema in orphans in Dakahlia, Egypt. *Sci World J*. 2013;2013:373120. [Crossref]

35. İrkörücü A. Gender difference in early maladaptive schemas. *Journal of Uluk University Institute of Social Sciences*. 2016;5:103-119.

36. Neaçsu VC. Differences in early maladaptive schemes expression. *Bull Transylv Univ Braşov*. 2016;9:65-73.

37. Samuels J, Eaton WW, Bienvenu OJ 3rd, et al. Prevalence and correlates of personality disorders in a community sample. *Br J Psychiatry*. 2002;180:536-542.

38. Bilge Y. DSM-5 kişilik bozuklukları için kısa bir ölçek: Coolidge Eksen II Envanteri Plus Türkçe Kısa Formun geliştirilmesi. *Anadolu Psikiyatri Derg*. 2018;19(Suppl 2):14-21.

39. Bilge Y, Berk ÖS. Coolidge Eksen II Envanteri Plus’ta (CATI+) yer alan DSM-III-R, DSM-IV-TR ve DSM-5 kişilik bozuklukları alt ölçeklerinin Türkçe güvenirlik ve geçerlik çalışması. *Uluslararası Sosyal Araştırmalar Dergisi*. 2017;10(53):459-474. [Crossref]

40. Hayes AF. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. Guilford Publications; 2017.

41. Arntz A, Jacobs G. *Üygulama Sema Terapi Sema Mod Yaklaşımına Giriş Rehberi*. Nobel Akademik Yayıncılık; 2016.

42. Trull TJ, Durrant CA. Categorical and dimensional models of personality disorder. *Annu Rev Clin Psychol*. 2005;1:355-380. [Crossref]

43. Bilge Y, Bilge Y. The examination of the relationship between gender and socio-economic level factors with psychological disorders in adolescents in Turkey. *Global Journal of Psychology Research: New Trends and Issues*. 2017;7(2):100-110. [Crossref]

44. Niditch LA, Varela RE. A longitudinal study of inhibited temperament, effortful control, gender, and anxiety in early childhood. *Child Youth Care Forum*. 2018;47:463-479. [Crossref]