

Structural Equation Model of Personality Traits, Psychopathology, and Nonverbal Immediacy Behavior

ABSTRACT

Objective: The aim of this study is to examine the relationships between personality traits, psychopathology, and nonverbal immediacy behaviors. The study gains importance because of the fact that personality traits, psychopathology, and the concept of nonverbal immediacy have not been studied together in Turkish culture.

Methods: The research sample was created with the convenience sampling method, one of the nonrandom sampling methods. The sample consisted of 336 university students aged 18 and over. In the study, the 10-Item Personality Inventory, Nonverbal Immediacy Scale-Self Report Form (NIS-STr), Symptom Checklist (SCL-90-R), and Communicator Styles Scale were used. To examine the effect of personality traits on SCL-90-R and the effect of SCL-90-R scores on nonverbal immediacy behavior, a structural equation model was used and the path analysis of the model was created.

Results: Although it was determined that the scores for conscientiousness, emotional stability, and extraversion in the scale of resilience to the scope of the study did not significantly predict the SCL-90-R scores ($P > 0.05$), the scores for agreeableness ($\beta = 0.38$, $P < 0.05$) and openness ($\beta = 0.38$, $P < 0.05$) predicted the SCL-90-R scores significantly and positively. In addition, it was determined that the scores of other applications from the SCL-90-R were similarly significant surrounding other predictors of NIS-STr scores ($\beta = -0.30$, $P < 0.05$).

Conclusion: It can be stated that personality traits are predictors of psychopathological symptoms. Students' SCL-90-R scores positively predicted the NIS-STr scores in a statistically negative way.

Keywords: Personality, psychopathology, nonverbal communication, structural equation modeling

Introduction

Several definitions have been provided with regard to personality, from a psychodynamic approach to a phenomenology approach. In the most general sense, it can be defined as "consistent behavioural patterns originating from the person themselves and their intra-personal processes".¹ In this study, personality is examined within the framework of feature theory. It is remarkable that studies conducted in recent years are mostly concentrated on Five Factor Theory (FFT). Based on the opinion that personality traits are related to psychopathology² and behavior³, a structural equation model is evaluated within the framework of FFT.

The theory is also referred to as the "Big Five" because it classifies personality traits in five basic factors. FFT is dimensioned as extraversion, openness to experience (openness), conscientiousness, agreeableness, and neuroticism.^{1, 4, 5} Emphasis is placed on the continuity of personal adaptation and emotional stability level of the individual in the neuroticism dimension. It has been stated that individuals with high neuroticism scores tend to react highly to daily stressors and emotional distress, feel anxious and insecure, and constantly deal with themselves with varying feelings.^{1, 6, 7} The extroversion dimension defined individuals as ac-

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tive, sociable, social, energetic, who like to participate in different groups and entertaining environments, who can easily make friends, who can make sudden decisions, and who are not shy.^{8, 9} Individuals with high scores in the agreeableness dimension are defined as quick believers, cooperative, sympathetic, generous, nonaggressive or cold, benign, mild-hearted, docile, tolerant individuals.^{8, 10} The conscientiousness dimension emphasizes that individuals are reliable, time-managed, disciplined, and organized.^{4, 6} Individuals who receive high scores in the dimension of openness to experience are considered individuals who like innovation and are sensitive to both their own and others' feelings. They are open to new ideas and can sometimes be described as unusual individuals in the environment.⁹

Psychopathology can be defined as "the state and course of a mental disorder or a pathological deviation from the normal or effective behaviour pattern."¹¹ It has drawn attention that there are not many studies examining the relationship between personality traits and psychopathology. Lamers et al¹² associated personality traits and psychopathology differently. It has been stated that the neuroticism feature is significantly associated with psychopathology, and personality traits constitute 19% of the variance explained in psychopathology. Bilen¹³ concluded in his study that the personality traits and interpersonal relationship styles of individuals aged 18 and over have effects on psychopathological symptoms. It was found that neurotic personality feature and furious style together have a predictive effect on anxiety and depression symptoms. It has been stated that the personality feature of extroversion causes depression; the neuroticism feature (emotional balance or imbalance) causes anxiety, depression, and anger-hostility; the self-discipline feature has a predictive effect on depression; and the adaptive feature has a predictive effect on anger-hostility.¹⁴ In contrast, it was found that psychopathology plays a mediating role between neuroticism and sexual impulsivity.¹⁵

MAIN POINTS

- *The scores of the students received from the neuroticism subdimension in TIPI and the obsessive-compulsive symptoms, anxiety, anger-hostility, paranoid thoughts, psychoticism, and interpersonal sensitivity subdimensions in SCL-90-R are statistically significant and positively predicted. Individuals with high levels of neuroticism are expected to have high levels of obsessive-compulsive, hostility to anger, paranoid thoughts, psychoticism, and interpersonal sensitivity.*
- *It was determined that the scores the students obtained from the subdimension of openness to experiences in TIPI positively predicted the scores they received from all subdimensions in SCL-90-R. It can be thought that individuals with high openness to experiences have symptoms at a psychopathological level.*
- *The scores of the students in the subdimension of conscientiousness in TIPI positively predicted the scores they received from all subdimensions except phobic anxiety in SCL-90-R. It can be thought that individuals with high conscientiousness trait carry some pathological symptoms.*
- *It was found that the scores of the students in the subdimension of agreeableness in TIPI positively predicted the scores they received from all subdimensions in SCL-90-R. Psychopathological symptoms can be seen in individuals with agreeableness.*

Research and articles on body language fall under the field of "Kinesic" science.¹⁶ Developed by Birdwhistell,¹⁷ this field explores non-verbal communication, including gestures, mimics, and body language.¹⁸ The concept of nonverbal immediacy, which appears as the urgency of body language, emerged during Mehrabian's¹⁹ studies in the field of verbal communication and gained importance on the grounds that it is more effective in conveying emotions. It emphasizes the importance of how an individual says something rather than what he says. It emphasizes that the gestures and gestures we use while speaking affect the meaning of the message intended to be transmitted.

Although it is influenced by culture, the use of body language is universal. Sometimes, patients may not be able to express their problems verbally. They may try to hide mental symptoms. In this context, nonverbal communication can reflect emotional states and social intentions as it is a multichannel communication tool.²⁰

This study aims to examine the relationships between personality traits, psychopathology, and nonverbal immediacy behavior. Therefore, the concepts of personality traits, psychopathology, and nonverbal immediacy gain importance because they are not studied together in Turkish culture.

Methods

Research Group

The study sample was created with the convenience sampling method, one of the nonrandom sampling methods. This method was preferred because it provides the opportunity to collect data until the required number of participants is reached, without wasting money, labor, and time.²¹ IBM Statistical Package for the Social Sciences 24.0 (IBM Corp.; Armonk, NY, USA) and AMOS 21.0 software were used in the statistical analysis of the data obtained from university students included in the study. Structural Equation Model was used to examine the effect of personality traits on SCL-90-R and the effect of SCL-90-R scores on Non-Verbal Immediacy Behavior, and the path analysis for the model was determined.

The sample consisted of 336 university students aged 18 and over. The data of the study were collected from undergraduate students of Near East University by entering the classes. An information form was presented to the individuals as well as the informed consent form. The sample group was selected on a voluntary basis. Approval was obtained from the Near East University Ethics Committee (Approval Date: July 9, 2018; Approval Number: NEU / SB / 2018/206).

Data Collection Tools

Ten Item Personality Inventory (TIPI): The scale developed by Gosling et al⁸ provides measurement with 10 items and a seven-point Likert-type rating. Based on the Five Factor Personality Theory developed by Costa and McCrae,⁹ each item consists of two synonymous adjectives. In this way, it is believed that meaning confusion that may arise from sentence structure is avoided. The scale was adapted into Turkish by Atak,⁴ and 420 participants between the ages of 18 and 25 were studied. In addition to the exploratory factor analysis and confirmatory factor analysis, the internal consistency correlation coefficient and test-retest reliability were also studied on the data set. The Kaiser-Meyer-Olkin (KMO) value was calculated as 0.89, and five factors with Eigen values above 1 and factor loads varying between

0.67 and 0.86 were obtained. As a result, it can be said that the expected measurement of the scale measures the observed feature. Cronbach alpha reliability coefficients of the subscales were found to be between 0.81 and 0.86. To test the validity of the scale, the criterion-related validity was examined and a moderately significant correlation was found with the other two scales. The analyses have shown that the structure validity results of TIPI are valid and reliable tools in terms of measuring personality traits.⁴

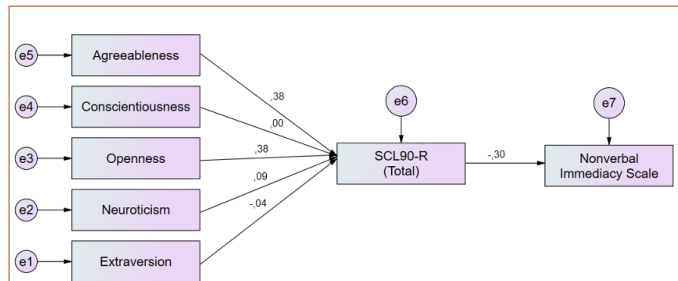


Figure 1. Path Analysis Results as Regards the Model-SCL-90-R, Symptom Checklist

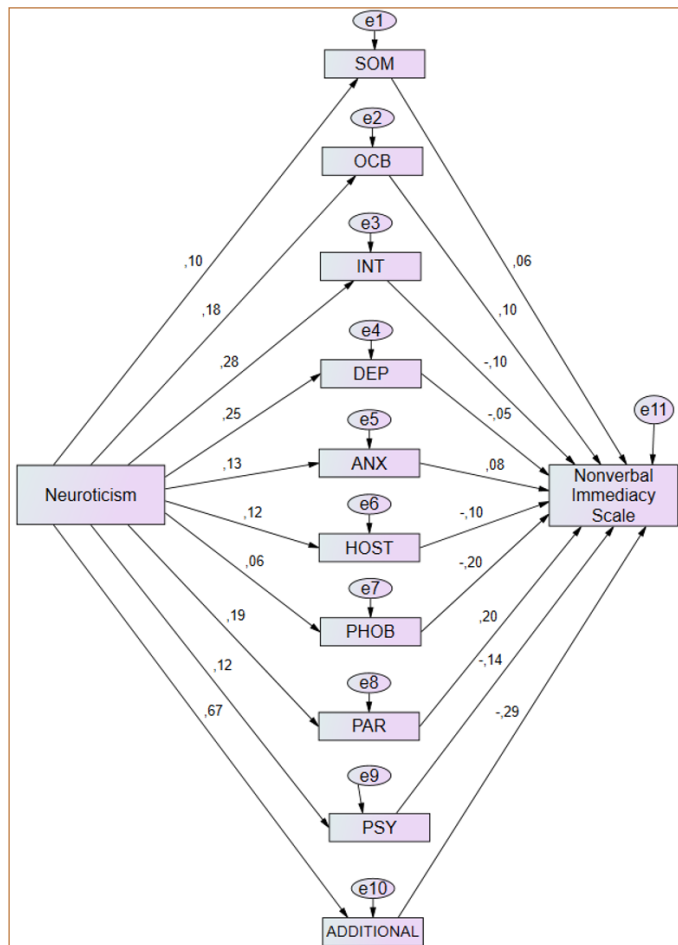


Figure 2. Path Analysis Results on the Predictive Status of Neuroticism Scores on SCL-90-R Scores and on the Predictive Status of SCL-90-R Scores on Nonverbal Immediacy Scale scores

Abbreviations: ANX, anxiety; DEP, depression; HOST, anger-hostility; INT, interpersonal sensitivity; OCB, obsessive-compulsive behavior; PAR, paranoid thought; PHOB, phobic reaction; PSY, psychoticism; SCL-90-R, Symptom Checklist; SOM, somatization.

Nonverbal Immediacy Scale-Self Report (NIS-Str): The scale developed by Richmond et al²² consisted of two forms, the self-report form and the observer form. The scales consisted of 26 similar items. The only difference is that the “he/she” subject is used in the observer form to emphasize the evaluation of the other party, and the self-report form uses the “I” subject. Each scale was composed of 13 positive and 13 negative items using a five-point Likert-type scale. Alpha reliability coefficient of the scale was determined as 0.90 for all data sets. The NIS-Str and the observer form, representing eight different types of nonverbal behavior with 26 items, were found to be statistically valid and reliable and were used in the literature. A high score from the scale indicates that the level of using nonverbal immediacy behavior is high, and a low score indicates that the level of using these behaviors is low. We adapted the scale into Turkish, and its alpha reliability coefficient was found to be 0.947.²³

Symptom Checklist (SCL-90-R): The scale prepared by Derogatis was adapted into Turkish by Kılıç.²⁴ It is used to scan the mental symptoms of a person and to determine the severity of symptoms in a certain period. The self-assessment scale, which consists of 90 items, is scored using a five-point Likert-type scale between “none” and “extreme”, which is specified with a score of 0, 1, 2, 3, or 4. It was composed of 10 symptom groups, including the following nine subscales and an additional scale that was not included in the scoring: somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, anger-hostility, phobic reaction, paranoid thought, and psychoticism.

Communicator Style Measure-Short Form (CSM): Developed by Norton,²⁵ CSM was created by selecting 51 items with the highest correlation coefficient from a 102-item question pool. The scale, which was revised in 1983, consists of 51 items (friendly, impressive, comfortable, argumentative, relevant, precise, communicating non-verbally, dramatizing, open, dominant, and communicative image consisting of five items) and 11 subdimensions. Dursun and Aydın²⁶ found the KMO value of the scale as 0.87 in their study for this modified scale. It is seen that the results of statistical analysis conducted on the Lisreal program for factor properties are more significant than the 1978 version. If the 7th, 13th, 39th, and 44th items with low reliability values are removed from the scale, it is seen that the scale reaches more reliable and valid values (root mean square error of approximation = 0.044).

Thus, the validity and reliability study of the 11-factor 47-item CSM was completed.²⁶

Results

Structural Equation Model

The structural equation model was used to examine the effect of personality traits on SCL-90-R scores and the effect of SCL-90-R scores on nonverbal immediacy behavior. The path analysis results for the model are shown in Figure 1.

It was determined that the scores of conscientiousness, neuroticism, and extraversion in TIPI of the students included in the study did not significantly predict SCL-90-R scores ($P > 0.05$), but agreeableness ($\beta = 0.38$, $P < 0.05$) and openness scores ($\beta = 0.38$, $P < 0.05$) were determined to predict SCL-90-R scores significantly and positively. In addition, it was determined that the scores the students received from SCL-90-R

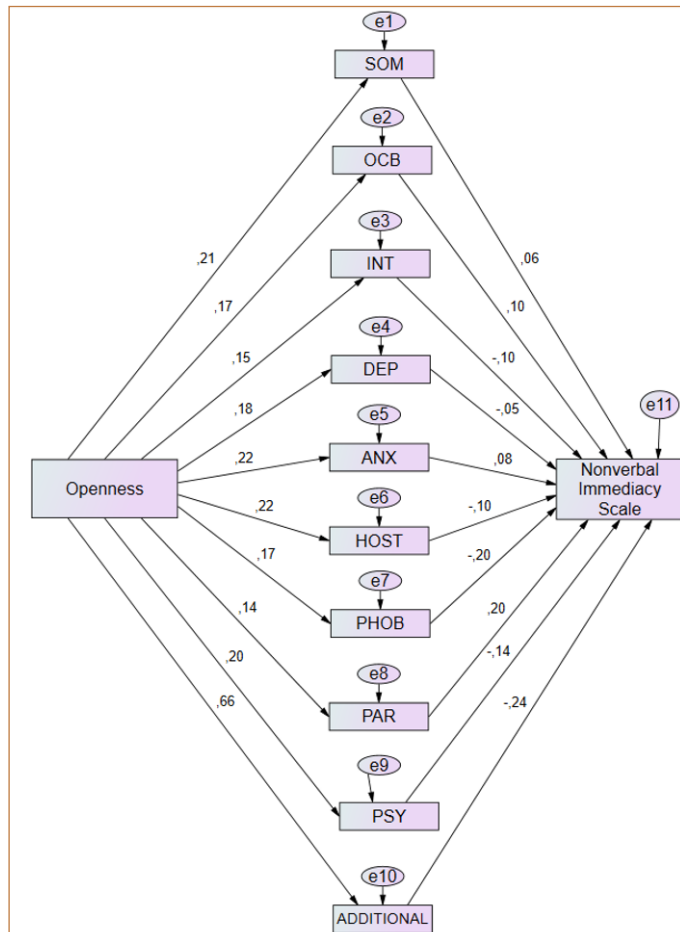


Figure 3. The Path Analysis Results of Openness to Experience Scores Predicting SCL-90-R Scores and SCL-90-R Scores Predicting Nonverbal Immediacy Scale Scores

Abbreviations: ANX, anxiety; DEP, depression; HOST, anger-hostility; INT, interpersonal sensitivity; OCB, obsessive-compulsive behavior; PAR, paranoid thought; PHOB, phobic reaction; PSY, psychoticism; SCL-90-R, Symptom Checklist; SOM, somatization.

predicted their NIS-Str scores at a statistically significant level and negatively ($\beta = -0.30, P < 0.05$).

As shown in Figure 2, the scores of the students received from the neuroticism subdimension in TIPI and the obsessive-compulsive symptoms, anxiety, anger-hostility, paranoid thoughts, psychoticism, and interpersonal sensitivity subdimensions in SCL-90-R are statistically significant and positively predicted ($P < 0.05$). The scores the students received from the subdimensions of somatization, obsessive-compulsive symptoms, and paranoid thoughts in SCL-90-R positively predicted their NIS-Str scores. In contrast, the scores they received from interpersonal sensitivity, anger-hostility, phobic anxiety, psychoticism, and the additional scale subdimension predicted negatively and statistically significantly ($P < 0.05$).

It was determined that the scores the students obtained from the subdimension of openness to experiences in TIPI positively predicted the scores they received from all subdimensions in SCL-90-R ($P < 0.05$) (Figure 3).

As shown in Figure 4, the scores of the students in the subdimension of conscientiousness in TIPI positively predicted the scores they

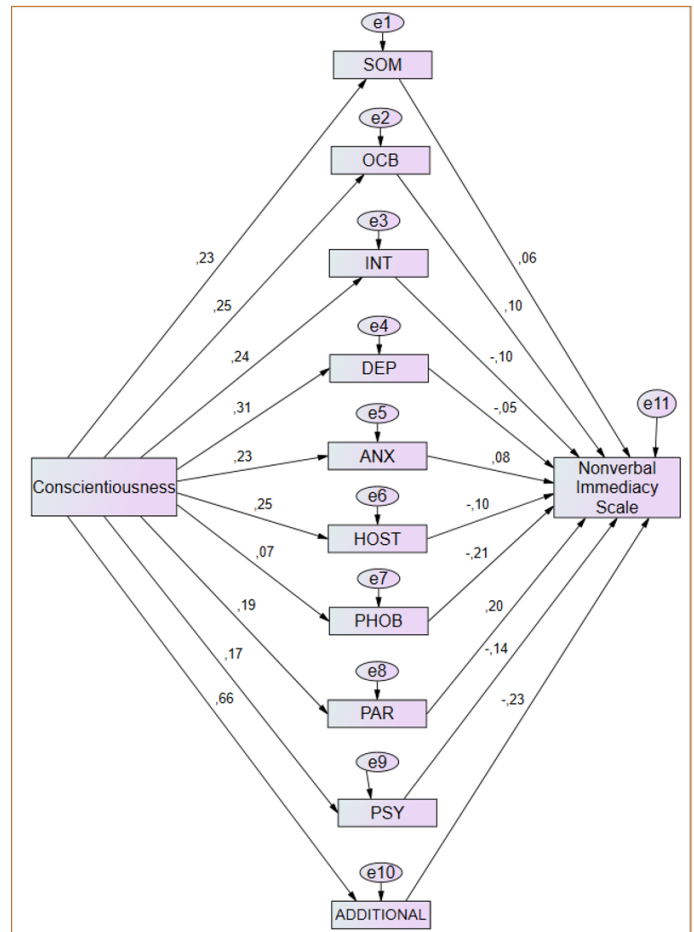


Figure 4. Path Analysis Results Regarding the Status of Conscientiousness Scores to Predict SCL-90-R Scores and SCL-90-R Scores to Predict Nonverbal Immediacy Scale Scores

Abbreviations: ANX, anxiety; DEP, depression; HOST, anger-hostility; INT, interpersonal sensitivity; OCB, obsessive-compulsive behavior; PAR, paranoid thought; PHOB, phobic reaction; PSY, psychoticism; SCL-90-R, Symptom Checklist; SOM, somatization.

received from all subdimensions except phobic anxiety in SCL-90-R ($P < 0.05$).

It was found that the scores of the students in the subdimension of agreeableness in TIPI positively predicted the scores they received from all subdimensions in SCL-90-R ($P < 0.05$) (Figure 5).

Discussion

After the adaptation study, data were analyzed over a sample of 336 people to determine the relationship and differences between personality traits, psychopathology, and nonverbal immediacy behaviors.

It was understood that the personality traits of the students included in the study, their agreeableness, and their openness to experience positively predicted the psychological symptoms. According to Akdur's²⁷ study, there was a negative correlation between personality traits and psychological symptoms such as agreeableness, openness to experience, conscientiousness, and extraversion, whereas a significant and positive relationship was found between the neuroticism personality trait and psychological symptoms.

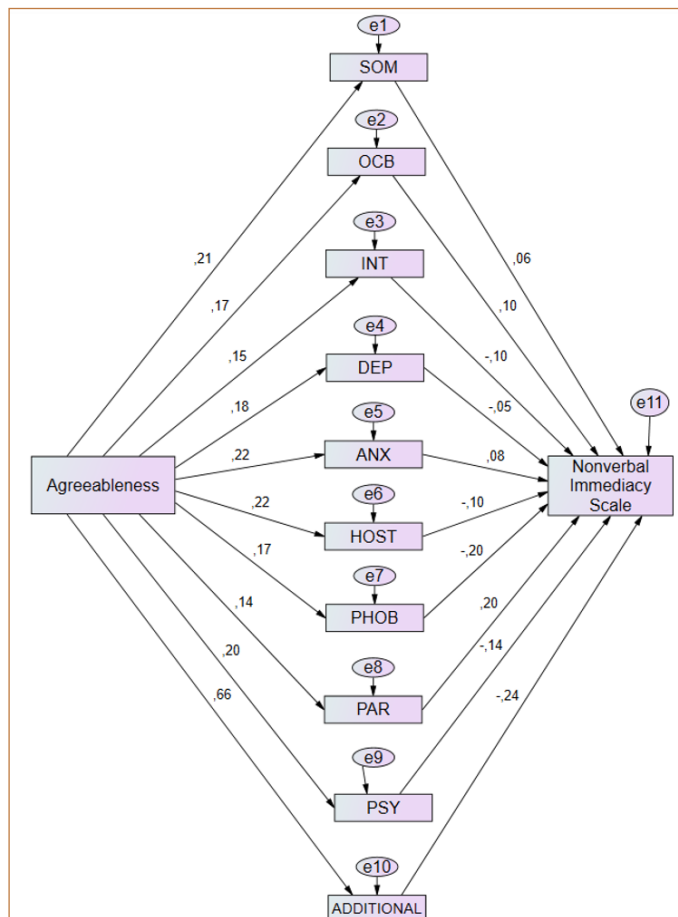


Figure 5. Path Analysis Results Regarding the Predictive Status of Agreeableness Scores on SCL-90-R Scores and SCL-90-R Scores on Nonverbal Immediacy Scale Scores

Abbreviations: ANX, anxiety; DEP, depression; HOST, anger-hostility; INT, interpersonal sensitivity; OCB, obsessive-compulsive behavior; PAR, paranoid thought; PHOB, phobic reaction; PSY, psychoticism; SCL-90-R, Symptom Checklist; SOM, somatization.

Based on the results obtained, the mental symptom list was compared again with personality traits in subdimensions. Thereupon, it was understood that the neuroticism personality trait was similar to Akdur's²⁷ work. According to the results of the study, individuals who score high on the neuroticism dimension are expected to receive high scores on the dimensions of obsessive-compulsive symptoms, anger-hostility, paranoid thinking, psychoticism, and interpersonal sensitivity. Kılıç Nurkan² used the Basic Personality Traits Scale in her study, and she found that the personality traits of agreeableness, extraversion, openness to development/reason, conscientiousness, and psychopathology subdimensions are negative; she also concluded that there is a significant and positive relationship with negative valence and emotional inconsistency personality traits.

According to the results of the study, extraversion is not related to the psychological symptom level; however, openness to experiences is associated with all psychic symptoms. According to the study results of Lamers et al,¹² although the extroversion personality feature and psychological and social well-being are strongly and significantly correlated, the neuroticism feature is significantly associated with psychopathology. According to the same research, extraversion and adaptability personality traits contribute significantly to positive

mental health. The results of the study show that personality traits explain a significant proportion of the variance calculated in psychopathology. To put it more clearly, personality traits constitute an important part of the variance in psychopathology (19%) and positive mental health (9%).¹² Klimstra et al²⁸ reported that the extroverted personality feature predicted depression significantly and negatively in Italian boys and girls.

The personality trait of agreeableness was found to be a negative predictor of depression in Netherlands adolescent boys and Italian adolescent girls. In addition, it was observed that the level of conscientiousness predicted lower levels of depression in Netherlands adolescent girls with high conscientiousness personality traits, and emotional balance personality traits in Italian adolescent boys and girls negatively predicted depression in six of eight adults. The personality trait of openness to experience was found to be a significant positive predictor of depression in Netherlands girls.²⁸ The data we obtained revealed that the conscientiousness feature is associated with all psychological symptoms except phobic anxiety, and agreeableness is associated with all mental symptoms.

When the relationships between TIPI and NIS-Str are examined, it can be stated that individuals who are open to experiences and have agreeableness personality traits use fewer nonverbal immediacy behaviors. Similarly, personality traits were measured with TIPI and compared on the website of the original scale. Analysis results on personality traits were found to be different in two studies. Although there was a positive correlation between the neuroticism subscale and NIS-Str, in this study conducted for the Turkish version, the neuroticism, openness to experience, and agreeableness subscales were found to be negatively correlated with NIS-Str. In another study, it was stated that there is a relationship between nonverbal behavior and personality traits.^{20, 29}

Ambady and Rosenthal³⁰ emphasized that some nonverbal communication behavior elements are associated with different psychopathologies. They stated that individuals with poor mental health were incapable of understanding and showing nonverbal cues. For example, they reported that a depressed or schizophrenic patient used fewer hand gestures, spoke slower, and used fewer facial expressions, and a client with a high level of anxiety showed nonverbal behaviors such as difficulty in establishing eye contact and restlessness. According to Kring and Stuart,³¹ nonverbal behaviors can be considered as antecedents of psychological disorders. As a result of our study, it can be said that as the nonverbal immediate proximity behavior increases, the symptoms of somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, anger-hostility, phobic anxiety, paranoid thinking, and psychoticism decrease.

Positive and negative significant correlations were obtained between personality traits and psychopathology. In this case, it can be stated that personality traits are predictors of psychopathological symptoms, as stated in the analysis. According to the data obtained, it can be stated that individuals with symptoms at the psychopathological level show less nonverbal immediacy behavior.

The working group can be restructured with different variables to obtain different data. The results can be studied if it is applied to the adolescent age group. Recurrence may be meaningful in older age groups or patient groups. Relationships between personality traits

and psychopathology can be restudied by scaling the Nonverbal Immediacy Scale.

Ethics Committee Approval: Ethics committee approval was received for this study from the Ethics Committee of Near East University (Approval Date: July 9, 2018; Approval Number: NEU / SB / 2018/206).

Informed Consent: Informed consent was obtained from the individuals who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - S.İ., Z.O.; Supervision - Z.O., Data Collection and/or Processing - S.İ., Z.O.; Analysis and/or Interpretation - S.İ., Z.O.; Writing - S.İ.

Conflict of Interest: The authors have no conflict of interest to declare.

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