



# The Effect of Emotional Intelligence on Empathy with the Mediating Role of Helping Behaviors in Female Prisoners with Anti-social Personality Disorder

Sara Taheri <sup>1</sup>, Sophia Khaneghahi <sup>2,\*</sup>, Mohammad Ali Fardin <sup>2</sup>

<sup>1</sup> Department of Psychology, Zahedan Branch, Islamic Azad University, Zahedan, Iran

<sup>2</sup> Assistant Professor, Department of Psychology, Zahedan Branch, Islamic Azad University, Zahedan, Iran

\*Corresponding Author: Assistant Professor, Department of Psychology, Zahedan Branch, Islamic Azad University, Zahedan, Iran. Email: s.khaneghahi@iauzah.ac.ir

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## Abstract

**Background:** This study aimed to investigate the mediating role of helping behaviors in the relationship between emotional intelligence (EI) and empathy among female prisoners diagnosed with antisocial personality disorder (ASPD).

**Objectives:** The present study employed a descriptive correlational design. Data analysis was conducted using structural equation modeling (SEM) with the partial least squares (PLS) approach. The statistical population comprised all female prisoners in Isfahan diagnosed with ASPD and sentenced to one year of incarceration.

**Methods:** A purposive sampling method was utilized. During the period from spring to summer 2023, 128 individuals diagnosed with ASPD were selected as the target group following clinical interviews and the administration of the Millon Clinical Multiaxial Inventory-III (MCMI-III) test. The research instruments included the MCMI-III, the EI Questionnaire, the Interpersonal Reactivity Index (IRI), and the Sociable Personality Questionnaire. Data analysis was performed using PLS software with SEM.

**Results:** The findings revealed that helping behavior acts as a mediating variable in the relationship between EI and empathy, enhancing the mutual effect of these variables.

**Conclusions:** The results of this study underscore the importance of understanding the interplay between EI, empathy, and helping behaviors in female prisoners with ASPD. The findings suggest that helping behaviors mediate the influence of EI on empathy, demonstrating that engaging in prosocial behaviors positively affects individuals' capacity to comprehend and share others' emotions, but the fit indices of the model were not confirmed.

**Keywords:** Empathy, Emotional Intelligence, Helping Behaviors, Female Prisoners, Antisocial Personality Disorder

## 1. Background

Imprisonment is a stressful life event with severe consequences for mental health. Individuals with a history of incarceration are at heightened risk for severe depression, increased dissatisfaction with life, and higher rates of mood disorders (1). Research consistently demonstrates that mental disorders are more prevalent among prisoners compared to the general population (2). Among the most common disorders observed in incarcerated individuals is antisocial personality disorder (ASPD), which is strongly associated with criminal behavior. Antisocial personality disorder is

characterized by persistent patterns of illegal, aggressive, deceptive, and impulsive actions that violate societal norms (3).

The diagnostic criteria for ASPD, as outlined in the DSM-5-TR, describe a pervasive pattern of disregard for and violation of the rights of others, beginning in adolescence and persisting into adulthood. These behaviors must meet specific diagnostic criteria. Criterion A requires evidence of a pervasive pattern of disregard for societal norms and others' rights, as indicated by at least three of the following behaviors: Failure to conform to social norms concerning lawful behavior, deceitfulness through repeated lying or the

use of aliases, impulsivity or failure to plan ahead, irritability and aggressiveness resulting in frequent physical fights or assaults, reckless disregard for the safety of oneself or others, consistent irresponsibility in maintaining work or financial obligations, and a lack of remorse shown by indifference to or rationalizing harmful actions (4). Criterion B specifies that the individual must be at least 18 years old. Criterion C requires evidence of conduct disorder with onset before the age of 15. Finally, criterion D states that antisocial behaviors cannot occur exclusively during episodes of schizophrenia or bipolar disorder. Studies indicate that the prevalence of ASPD is significantly higher among prisoners, with rates reaching up to 47.2% in correctional facilities. These behaviors often result in substantial challenges in social and psychological functioning, both for the affected individuals and for society at large (5).

Antisocial personality disorder is a pervasive mental health issue among incarcerated individuals, significantly influencing their criminal behaviors and overall well-being. Addressing this disorder through targeted interventions is essential for improving rehabilitation outcomes and reducing its societal impact (6).

A crucial but often overlooked variable in understanding ASPD is empathy. Empathy refers to the ability to understand and share the feelings of others, encompassing two primary dimensions: Cognitive empathy (understanding others' perspectives) and emotional empathy (sharing others' emotions) (7). Deficits in empathy have been strongly associated with destructive and antisocial behaviors, particularly in individuals with ASPD (8). Recent research highlights the link between empathy deficits and violent crimes, demonstrating that individuals with ASPD often lack the emotional capacity to recognize the harm they cause to others (7).

These individuals exhibit manipulative behaviors to exploit others, lack remorse, demonstrate poorly developed emotional awareness and control, and struggle with expressing their feelings, developing empathy, and maintaining relationships with others. Empathy is the emotional capacity and cognitive ability that enable individuals to understand the feelings and perspectives of others, thereby reducing antisocial behaviors. It comprises both cognitive and emotional components that interact dynamically. The emotional component involves the ability to feel another person's

emotions and react appropriately, playing a critical role in suppressing aggressive behaviors. In contrast, the cognitive component involves understanding another person's emotions and recognizing emotional facial expressions. This ability is defined as interpreting others' emotional states based on their facial expressions (9). Neural mechanisms related to recognizing emotional facial expressions are associated with the basal ganglia, prefrontal cortex, and particularly the amygdala (10). The eyes play a pivotal role in recognizing emotional facial expressions, with eye attention linked to activity in the amygdala (11).

One widely used tool for assessing the ability to recognize facial emotional expressions is the reading the mind in the eyes test (RMET). This test measures emotional empathy and reflects emotional processes within the framework of the theory of mind. The theory of mind, defined as the cognitive ability to infer the mental states of oneself and others, is a component of social cognition, encompassing emotion recognition and empathy (12). Notably, psychopathic individuals, often considered to have a more severe form of ASPD, are reported to lack the capacity for complete empathy toward others (13).

Emotional intelligence (EI) plays a critical role in regulating emotions and understanding the emotional states of others. It is broadly defined as a set of abilities, skills, and traits that guide how emotions are identified, understood, regulated, managed, and processed behaviorally (14). Mayer and Salovey (15) distinguished EI as a distinct subset of the earlier, more comprehensive study of social intelligence that emerged in the early twentieth century (16). Goleman's book (17) popularized EI as a critical area of study, supporting Mayer and Salovey's (15) definition of EI as the ability to recognize and discern one's own emotions and those of others, understand how emotions regulate behavior, and adapt actions accordingly in various social contexts. Research highlights that individuals with higher EI are better equipped to anticipate emotional responses and engage in prosocial behaviors. Emotional intelligence encompasses the ability to effectively manage emotions in oneself and others, making it a vital tool for navigating complex social interactions (8). However, meta-analyses reveal that individuals with ASPD typically exhibit lower levels of EI, further exacerbating their interpersonal difficulties (2).

In the broader social context, helping behaviors – voluntary actions aimed at benefiting others – are

directly influenced by empathy and EI. These behaviors are essential for fostering social cohesion and reducing antisocial tendencies. Helping behaviors can be driven by intrinsic motivations such as altruism or by external social expectations (8). They also reflect an individual's ability to perceive others' needs and respond in ways that promote mutual well-being. Studies have shown that deficits in helping behaviors are often linked to a lack of empathy, which can perpetuate antisocial behaviors (16).

Helpful individuals exhibit three key characteristics: (1) A sense of attentiveness to the needs of others; (2) the ability to adopt others' perspectives by figuratively placing themselves in others' positions; and (3) a sense of helpfulness even when providing assistance might seem unnecessary or unwarranted, such as in situations where the need for help is inaccurately perceived (17). Since the mid-1960s, numerous studies and surveys have explored helping behavior and social indifference. However, within Iran, these topics have garnered limited scholarly attention, resulting in insufficient information about their prevalence and implications in the country (17). Helping behavior, as a personality trait, involves presenting a favorable self-image. This inclination may drive individuals to offer responses that are artificial or inconsistent with reality to project an idealized persona to others. This type of behavior, conceptualized as a construct that motivates individuals to act in ways pleasing to others, has strong ties to personal discipline (18). Moreover, research suggests that helping behaviors significantly contribute to the development of empathy and the prevention of antisocial tendencies. By fostering empathy, these findings align with prior research on the link between empathy development and the emergence of antisocial behaviors (19).

Empirical evidence further demonstrates that deficits in empathy often lead to antisocial behaviors. Addressing these deficits early in life and continuing interventions throughout the lifespan is crucial. For example, implementing targeted programs for offenders has proven to be an effective strategy for mitigating empathy deficits (20). Previous studies also reveal that social influences, antisocial tendencies, and exposure to environments lacking positive role models significantly diminish empathy, thereby contributing to the development of antisocial behaviors (21).

A review of existing literature underscores several significant findings: (1) Comparison of inadequate role

models for personality disorders and criminal thinking among male and female prisoners convicted of violent crimes (22); (2) a proposed model predicting helping behaviors based on variables such as risk perception, self-efficacy, and social problem-solving, with responsibility serving as a mediating variable (23); (3) a meta-analytic investigation of the correlation between psychopathy, antisocial behavior, and empathy within diverse conceptual frameworks (24); and (4) an exploration of the high psychological morbidity and empathy levels among female prisoners in China (25).

Nevertheless, a critical gap remains in understanding the mediating role of helping behaviors in the relationship between EI and empathy among female prisoners diagnosed with ASPD. Antisocial personality disorder is a significant concern within prison populations, with a notably higher prevalence among female prisoners compared to their male counterparts. Additionally, female prisoners experience elevated rates of psychiatric disorders and comorbidities, underscoring the need for further research into their unique challenges and unmet needs.

Women who deviate from societal norms by engaging in criminal activities often face alienation, gender discrimination, stigma, and negative labeling, which result in rejection by their families and communities. Consequently, they encounter numerous obstacles in meeting their emotional, material, and social needs.

This study aims to address these gaps by investigating the mediating role of helping behaviors in the relationship between EI and empathy among female prisoners with ASPD. Understanding these dynamics is crucial for designing effective interventions to improve mental health outcomes and foster prosocial behaviors in incarcerated populations. The central research question guiding this study is: How do helping behaviors mediate the relationship between EI and empathy in female prisoners with ASPD?

## 2. Objectives

The objective of this study was to investigate the effect of EI on empathy, with the mediating role of helping behaviors, in female prisoners with ASPD.

## 3. Methods

### 3.1. Study Design

This study employed a descriptive and correlational research design. Structural equation modeling (SEM) was used to analyze causal relationships in the data.

### 3.2. Participants

The study population consisted of all female prisoners in Isfahan diagnosed with ASPD, each serving a prison sentence of at least one year for offenses such as theft and drug-related crimes.

### 3.3. Sampling Method and Sample Size Determination

A purposive sampling method was employed to select participants. Initial coordination was established with the Organization of Prisons in Isfahan to facilitate data collection. Among 600 female prisoners incarcerated between spring and summer 2023, 180 individuals met the diagnostic criteria following a clinical interview based on DSM-5-TR and assessment with the Millon Clinical Multiaxial Inventory-III (MCMI-III) conducted by a clinical expert. Based on the Morgan table, a minimum sample size of 118 was required for this population. To ensure adequate representation, 130 participants were selected using an available sampling method. Informed consent was obtained, and questionnaires were administered individually. Ultimately, 128 valid questionnaires were analyzed after excluding incomplete responses to test the research hypotheses.

#### 3.3.1. Inclusion Criteria

Participants aged 20 to 60 years, with at least one year of incarceration, a minimum education level of sixth grade, and demonstrated willingness to participate were included.

#### 3.3.2. Exclusion Criteria

Individuals with physical conditions affecting mobility or speech or those with severe mental disorders other than ASPD were excluded.

### 3.4. Ethical Considerations

Ethical guidelines were adhered to, ensuring voluntary participation and obtaining informed consent. Measures were implemented to protect participants' privacy and confidentiality, including secure storage of completed questionnaires and the omission of any identifying information. Due to the

sensitivity of the research, no photographs or videos were taken. The data collected were used solely for research purposes in accordance with the study's objectives and hypotheses.

### 3.5. Instruments

#### 3.5.1. Antisocial Personality Disorder

To diagnose individuals with ASPD, the diagnostic criteria outlined in the Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) were employed. These criteria were assessed through a clinical interview conducted by a clinical specialist. Additionally, the MCMI-III was used (26).

#### 3.5.2. Millon Clinical Multiaxial Inventory

The MCMI-III is a self-report inventory consisting of 175 yes/no items. It assesses 14 clinical personality patterns and 10 clinical symptoms and is designed for individuals aged 18 years and older. This test is a key instrument for the objective evaluation of clinical symptoms (26). The validity of the MCMI-III has been established through factor analysis and verified by measures of internal consistency and retest reliability. Reported reliability coefficients for test-retest intervals (ranging from 5 to 14 days) are high, with an average of 0.91 (26).

#### 3.5.3. Emotional Intelligence Questionnaire

The EI Questionnaire was developed by Schering in 1996 (27) and comprises 33 items. Each question is scored on a 5-point Likert scale. The components assessed by the questionnaire include self-awareness, self-regulation, self-motivation, empathy, and social skills. For specific items (28, 22, 18, 33, 31, 13, 14, 20, 12, 9, 1), responses to option A are scored 5 points, while responses to options B, C, D, and E are scored 4, 3, 2, and 1 points, respectively. For all other items, scoring is reversed, with option A assigned 1 point and option E assigned 5 points. The total score for the EI Questionnaire ranges from 33 to 165. The original version of this questionnaire consists of 70 items divided into two sections. The reliability of the EI Questionnaire was evaluated using Cronbach's alpha, which yielded a coefficient of 0.84 in previous studies. Mansori (28) calculated reliability through both bisecting and Cronbach's alpha methods, reporting coefficients of 0.94 and 0.91, respectively. In the current



study, the Cronbach's alpha coefficient for the EI scale was 0.791.

#### 3.5.4. Empathy Questionnaire

To assess empathy, the "List of Interpersonal Reactivity" questionnaire was employed (28). This self-report instrument consists of 28 items and four subscales, each examining a specific dimension of general empathy. The subscales are: (1) Perspective-taking, (2) imagination, (3) empathic concern, and (4) personal distress (29). Each subscale contains seven items. Respondents are asked to indicate the extent to which each item reflects their situation on a 5-point Likert scale, ranging from 0 (not at all descriptive of me) to 4 (very descriptive of me). Davis (7) reported Cronbach's alpha coefficients ranging from 0.71 to 0.77 for each of the four subscales. Test-retest reliability was reported to be between 0.62 and 0.80 after a 4-week interval (28). In the research by Feizabadi et al. (30), Cronbach's alpha coefficients for the subscales were: (1) Empathic concern: 0.68, (2) imagination: 0.70, (3) perspective-taking: 0.68, and (4) personal distress: 0.71. The overall Cronbach's alpha for the empathy scale was reported as 0.773 in the same study.

#### 3.5.5. Helping Behavior Questionnaire

The sociable personality encompasses an individual's feelings, thoughts, and desires related to sociable and helpful behavior, including actions that benefit others. The term refers to actions that do not provide direct benefits to the person performing them and may even involve risks. The Sociable Personality Questionnaire, developed by Penner and Finkelstein (31), is a 30-item version of the full prosocial personality battery and is frequently used in social psychology to evaluate prosocial tendencies from a personality trait perspective. This tool includes seven subscales: Social responsibility, empathic communication, perspective-taking, personal distress, bilateral moral reasoning, other-oriented arguments, and self-reported altruism. These subscales measure two general factors of helping and empathy-oriented others. The other-oriented empathic factor includes scores from social responsibility, empathic communication, perspective-taking, other-oriented moral reasoning, and bilateral moral reasoning, while the helping factor includes scores from personal distress and self-reported altruism. In Penner and Finkelstein's study (31), the helping behavior variable was measured by calculating the total

scores of the personal distress and altruism components. To calculate the personal distress component scores, questions 19, 17, and 14 were analyzed, while for the self-reported altruism component, questions 26 to 30 were used. The entire questionnaire typically takes 15 to 20 minutes to complete, with 5 to 10 minutes sufficient for the helping behavior subscale.

The Persian version of the Sociable Personality Questionnaire was examined by Saidi et al. (32) with a sample of 850 students. The test-retest reliability for the whole questionnaire was reported as 0.98, with subscale reliabilities ranging from 0.42 to 1. The internal consistency was found to be 0.79 for the entire questionnaire, with subscale reliabilities ranging from 0.17 to 0.74, indicating satisfactory reliability. Cronbach's alpha for the helping behaviors scale was reported as 0.729.

#### 3.6. Statistical Analysis

For statistical analysis, partial least squares (PLS) software was utilized, applying SEM. Structural equation modeling is a versatile set of methods used by researchers in both observational and experimental studies. Although SEM is predominantly applied in the social and behavioral sciences, it is also used in fields such as epidemiology and business. A common definition of SEM is: "A class of methodologies that seeks to represent hypotheses about the means, variances, and covariances of observed data in terms of a smaller number of 'structural' parameters defined by a hypothesized underlying conceptual or theoretical model" (33).

Structural equation modeling involves constructing a model that represents how various aspects of a phenomenon are thought to be causally connected. Structural equation models often include postulated causal relationships among latent variables (variables that are theorized to exist but cannot be directly observed) and connect these latent variables to observed variables, whose values are present in the dataset. These causal relationships are typically represented by equations, although the structural relationships can also be depicted in diagrams with arrows, as shown in Figure 1.

The causal structures imply that specific patterns should emerge in the values of the observed variables, which makes it possible to estimate the magnitude of the hypothesized effects and test whether the observed

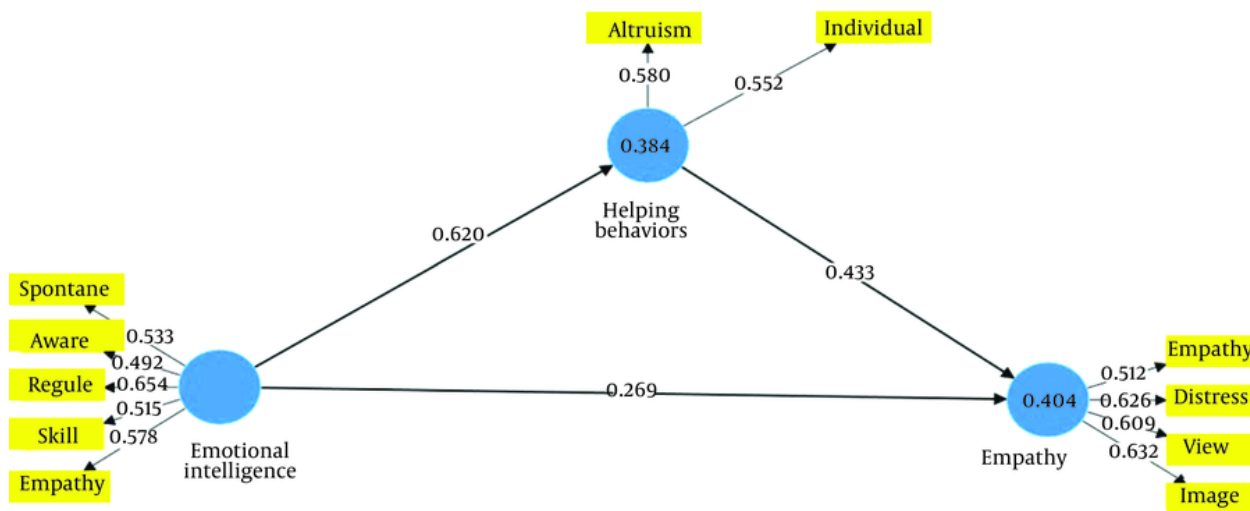


Figure 1. Reflexive structural model fitted with *t*-values and standard coefficients

data align with the proposed causal structures (34). While the boundary of what constitutes a structural equation model is not always clear, SEM models commonly contain postulated causal connections among latent variables (e.g., attitudes, intelligence, or mental illness) and their relationships with observable variables. Structural equation modeling techniques encompass methods such as confirmatory factor analysis, confirmatory composite analysis, path analysis, multi-group modeling, longitudinal modeling, PLS path modeling, latent growth modeling, and hierarchical or multilevel modeling (33). Data analysis was conducted using PLS software and SEM. Partial least square was chosen for its ability to handle complex models with small sample sizes and non-normal data. The analysis included descriptive statistics (e.g., frequency, percentage, mean, standard deviation) using SPSS version 27, and structural analysis with SmartPLS version 4.

**4. Results**

The demographic data examined include prison term, education level, and age of participants. Table 1 provides descriptive statistics for the age and length of imprisonment of participants, as well as their education levels. Additionally, the mean and standard deviation are presented in Table 1.

As shown in Table 1, the mean age of the participants was 36.4 years, with a standard deviation of 8.15. Additionally, the findings indicate that the duration of imprisonment had a mean of 8.72 years and a standard deviation of 4.62. Regarding education levels, 47 participants (36.7%) had less than a high school diploma, 55 participants (43%) held a high school diploma, and 26 participants (20.3%) had undergraduate degrees. In this research, 128 individuals met the conditions for participation. The overall empathy score was 75.184 with a standard deviation of 13.242; for EI, the mean was 51.317 with a standard deviation of 20.184; and for helping behavior, the mean was 83.082 with a standard deviation of 9.329. The results of the normality test show that the distribution of all three samples is abnormal, with the significance level for each variable being less than 0.05. In this section, the research hypotheses were tested using SEM. The reflexive structural model, fitted with *t*-values and standard coefficients, is depicted in Figure 1.

As shown in the results of Figure 1, EI had the highest impact on helping behavior, with an estimated coefficient of 0.62. In contrast, the lowest impact was observed between EI and empathy, with an estimated coefficient of 0.26. The fit indices for the research model are presented in Table 2.

The statistics in Table 2 indicate that the model indices, including the standardized root mean square residual (SRMR) and the Normed Fit Index (NFI), are in

**Table 1.** Descriptive Statistics of Research Variables

| Variables                    | Mean ± SD       |
|------------------------------|-----------------|
| Age                          | 36.405 ± 8.155  |
| The duration of the sentence | 8.715 ± 4.622   |
| Empathy                      | 75.184 ± 13.242 |
| EI                           | 51.317 ± 20.184 |
| Helping behavior             | 83.082 ± 9.329  |

Abbreviation: EI, emotional intelligence.

**Table 2.** Fit Indices for the Research Model

| Criterion  | Fitted Model | Estimated Model |
|------------|--------------|-----------------|
| SRMR       | 0.104        | 0.104           |
| D-ULS      | 1.459        | 1.459           |
| D-G        | 0.347        | 0.347           |
| Chi-square | 271.525      | 271.525         |
| NFI        | 0.402        | 0.402           |

Abbreviations: SRMR, standardized root mean square residual; NFI, Normed Fit Index.

**Table 3.** Fornell-Larcker Index for Evaluating Divergent Validity and Variance

| Variables        | EI    | Empathy | Helping Behavior |
|------------------|-------|---------|------------------|
| Helping behavior | 0.566 | -       | -                |
| Empathy          | 0.599 | 0.596   | -                |
| EI               | 0.613 | 0.542   | 0.557            |

Abbreviation: EI, emotional intelligence.

the weak range. According to the path analysis in the previous tables, changes in helping behavior can play a mediating role in the relationship between empathy and EI; however, the fit of the model has not been confirmed. The Fornell-Larcker Index for assessing divergent validity and variance is shown in Table 3.

Table 3 presents the divergent validity of the model based on the Fornell-Larcker criterion. The diagonal values represent the average variance extracted (AVE), while the values below the diagonal indicate the squared correlations. The AVE for each construct was higher than the squared correlation of that construct with others, confirming the divergent validity of the model. Direct coefficients in the research model are shown in Table 4.

As shown in Table 4, the impact of EI on empathy was significant ( $P < 0.001$ ,  $R = 0.26$ ), as was its impact on helping behavior ( $P < 0.001$ ,  $R = 0.62$ ). Additionally,

helping behavior was shown to significantly influence empathy ( $P < 0.001$ ).

As shown in Table 5, the mediating variable of helping behavior can explain 0.111 of the relationship between EI and empathy ( $P = 0.013$ ,  $t = 2.488$ ). Given that the obtained  $t$ -value is greater than 1.96, it can be stated that the main hypothesis of the research regarding the mediating role of helping behavior in the relationship between EI and empathy is confirmed.

### 5. Discussion

This research aimed to investigate the mediating role of helping behaviors in the relationship between EI and empathy among female prisoners with ASPD. The findings of the path analysis revealed that helping behaviors mediate the relationship between EI and empathy; however, the model's fit indices were not confirmed.

**Table 4.** Coefficients of Direct Effects in the Research Model

| Directions                  | Impact Rate | Corrected Coefficient | SD    | t-Statistic | P-Value |
|-----------------------------|-------------|-----------------------|-------|-------------|---------|
| Helping behavior→ empathy   | 0.433       | 0.450                 | 0.087 | 4.991       | 0.001   |
| <b>EI→ helping behavior</b> | 0.620       | 0.633                 | 0.056 | 11.099      | 0.001   |
| EI→ empathy                 | 0.269       | 0.267                 | 0.099 | 2.727       | 0.001   |

Abbreviation: EI, emotional intelligence.

These findings align with prior studies, including Gonzalez Moreno and Molero Jurado's exploration of the relationships between helping behaviors, empathy, and EI as factors influencing a healthy lifestyle and violence in teenagers (35). Similarly, Deng et al. examined gender differences in empathy, EI, and problem-solving abilities among nursing students, contributing further insights into these dynamics (36).

In this research, relationships such as empathy and helping behavior, EI and helping behavior, and EI and empathy were confirmed. However, certain fit indices, such as SRMR and NFI, did not reach optimal levels, which can be attributed to various factors. One significant limitation was the inability to access a larger sample size. The study's total statistical population consisted of 600 individuals over six months. Of these prisoners, only 180 were diagnosed with ASPD, leading to a final sample size of 128. Another challenge was the tendency for deception among individuals with this disorder, resulting in false responses and limited cooperation. Additionally, mood disturbances and depression associated with incarceration forced the researchers to repeat the questionnaires to ensure accuracy. Given these challenges, it is reasonable that the model's fit indices did not achieve optimal levels. Nonetheless, the findings are based on real evidence and real data.

According to Gonzalez Moreno and Molero Jurado's research (35), helping behaviors demonstrate the important role of empathy and EI. They argued that individuals with high EI are better able to understand and manage their own emotions while recognizing and interpreting the emotions of others, which fosters increased helping behaviors. Their theoretical model further suggests that low EI is associated with criminal and antisocial behaviors. Since individuals with ASPD struggle with theory of mind and interpreting others' mental states, they exhibit reduced empathy and heightened emotional problems.

In explaining these findings, it can be noted that ASPD is a neurodevelopmental condition with profound negative effects on individuals and society. Individuals with ASPD display extreme disregard for others' rights and interests. Their antisocial behaviors often stem from empathy deficits, which involve both emotional and cognitive dimensions. Theoretical perspectives highlight the intricate interplay of these dimensions in empathic behavior (37).

Individuals with ASPD frequently exhibit emotional deficits, interpersonal dysfunctions, and behavioral disorders marked by a lack of remorse or concern for others. They exploit and harm others without regard for their suffering, effectively treating them as prey. Such behaviors underscore the central role of empathy deficits in the manifestation of ASPD (38). Empathy serves as the social glue fostering understanding, relationships, and prosocial behaviors, all of which are essential for societal cohesion (37). Moreover, the dynamic regulation of empathy in response to situational factors emphasizes its contextual nature, particularly in individuals with healthy emotional functioning (39).

Research indicates that EI deficits are a hallmark of ASPD, characterized by difficulties in recognizing and regulating emotions. These challenges result in diminished empathy and increased social dysfunction (8). Such deficits are linked to aggression and violence, as Kaseweter et al. (40) highlights the association between ASPD traits and elevated rates of criminal behavior. While interest in the interplay of ASPD characteristics and EI is growing, further research is necessary for a deeper understanding (41).

Findings also reveal that individuals with ASPD face emotional deficits, including challenges in emotion recognition and regulation, low moral emotions (e.g., guilt, regret), and indifference to situations that typically elicit shame (11). These deficits, particularly in recognizing fear and sadness, disrupt empathic activation, thereby reducing inhibition of antisocial



**Table 5.** Standard Coefficients of the Mediator Role in the Research Model

| Direction                     | Impact Rate | Corrected Coefficient | SD    | t-Statistic | P-Value |
|-------------------------------|-------------|-----------------------|-------|-------------|---------|
| EI→ helping behavior→ empathy | 0.111       | 0.112                 | 0.045 | 2.488       | 0.013   |

Abbreviation: EI, emotional intelligence.

behaviors. Empathic individuals anticipate the consequences of their actions on others and are more likely to engage in helping behaviors (40).

The study further demonstrates that incarcerated individuals exhibit lower levels of EI compared to those displaying prosocial behaviors. This discrepancy is especially evident in their ability to understand and manage emotions, which correlates with planning actions based on emotional insights. These findings align with research showing a positive correlation between EI, prosocial behavior, psychological adjustment, and helpfulness, and a negative correlation with impulsivity, aggression, and hostility (42).

In daily life, individuals make decisions requiring a balance between self-interest and helping others. Observing acts of generosity, kindness, or prosocial behavior evokes positive emotions (e.g., compassion, admiration), physiological responses (e.g., crying, chest fullness), and cognitive reflections (e.g., aspirations for self-improvement). These responses often inspire further prosocial actions (43). Conversely, individuals exhibiting high levels of antisocial behaviors show diminished helping behaviors and empathy, accompanied by greater indifference. This lack of empathy hinders their decision-making in prosocial contexts (44).

### 5.1. Limitations and Future Directions

This study focused exclusively on female prisoners with ASPD, limiting the generalizability of the findings to other populations. Security protocols within the prison prevented group testing, significantly extending the study timeline. Lengthy administrative procedures required for access and the reluctance of some inmates to complete questionnaires posed additional challenges. Another limitation of the research is the small sample size, as there are only 180 female prisoners with ASPD, making it impractical to include all of them in the research, which would necessitate a census and potentially compromise the validity of inferential statistics. Consequently, with the help of Morgan's table, a sample of 128 individuals was selected, and this small

sample size contributed to the model indicators not reaching optimal levels.

Future research should examine these variables in diverse populations to improve the generalizability of findings. Additionally, longitudinal studies on female prisoners with ASPD are recommended to explore factors influencing their mental health and implement interventions to enhance psychological well-being. It is also suggested that similar studies be repeated with a sufficient sample size.

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### Footnotes

**Authors' Contribution:** Study concept and design: S. T. and S. Kh.; Analysis and interpretation of data: S. T. and M. A. F.; Drafting of the manuscript: S. T.; Critical revision of the manuscript for important intellectual content: S. T. and S. Kh.; Statistical analysis: S. T.; Administrative, technical, and material support: M. A. F. and S. Kh.; Study supervision: S. Kh.; and Acquisition of data: S. T.

**Conflict of Interests Statement:** We declare that one of our authors (Mohammad Ali Fardin, reviewer) is of the editorial board. The journal confirmed that the author with CoI was excluded from all review processes.

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