

Emotional intelligence as a mediator between attachment security and empathy in medical students.

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Introduction

Empathy is one of the core competencies that medical students should acquire [1]. The identification of the major influencing **factors** of empathy becomes **necessary** to organize tailored **teaching interventions**.

Emotional intelligence (EI) has demonstrated an **association with empathy** [2]. The EI is the ability to be **aware of**, show appropriately, comprehend and effectively regulate ones' **own** and **others' emotions** [3]. **Attachment security (AS)** is another key component which may affect empathy [4,5]. The **secure attachment style** refers to the propensity to establish close emotional relationships.

The **key components of EI** – to perceive, facilitate, understand and manage emotions – have been found to **be predicted by AS** [6]. When compared with insecure people, secure individuals are more able to cope with stressful emotions in social situations, experience more positive emotions during the interactions, and are more skilled in emotion regulation [7].

Materials

Interpersonal Reactivity Index (IRI) [8]: consists of 28 items divided into four subscales. 1) **Empathic concern (EC)** feelings of sympathy and apprehension for adversities of other people, 2) **Personal distress (PD)** feelings of personal anxiety and worry in stressed interpersonal situations, 3) **Perspective taking (PT)** natural propensity to assume the psychological point of view of others, 4) **Fantasy (F)** persons' tendencies to feel like fictional characters in movies, plays, and books. Since IRI-F is not relevant for our aims, we decided to exclude it from the statistical analyses.

Emotional Quotient Inventory (EQ-i) [9]: self-report questionnaire of 133 items. The individual's responses provide a total emotional quotient score (EQ-i Total) and five composite scales : 1) intrapersonal, 2) interpersonal, 3) stress management, 4) adaptability, and 5) general mood (optimism and happiness). **In this study we used the EQ-i Total score as a global index of EI.**

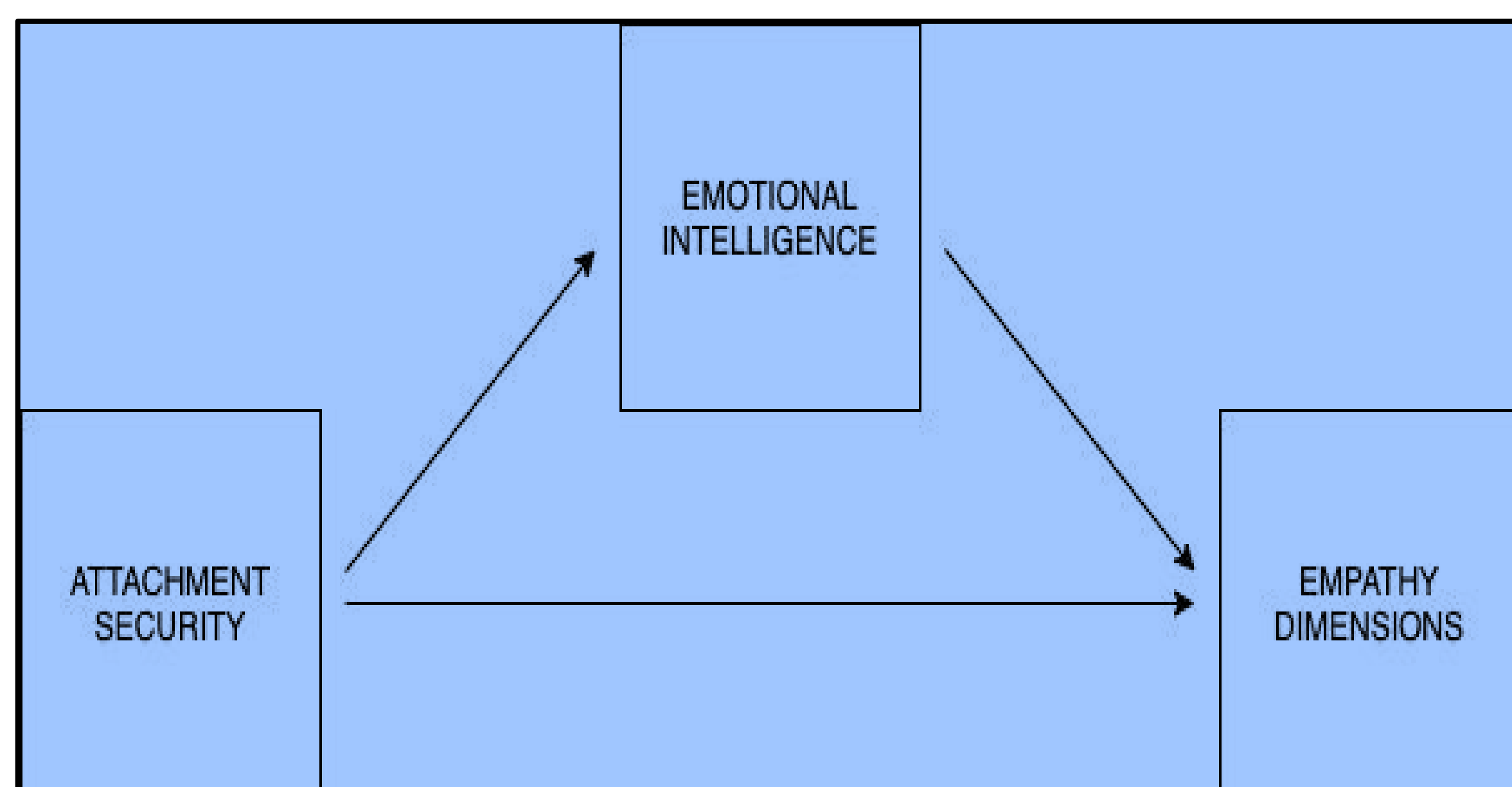
Attachment Style Questionnaire (ASQ) [10]: it comprises 40 items divided in five subscales. In this paper, **Confidence in oneself and others (ASQ-C)** was considered as an index of the secure attachment style; **Discomfort with Closeness (ASQ-DC)** and **Relationships as Secondary to achievement (ASQ-RS)** were summed together to create a unique index of the avoidant attachment style; and **Need for Approval (ASQ-NA)** and **Preoccupation with Relationships (ASQ-PR)** were summed together to create a unique index of the anxious attachment style.

Methods

This **cross-sectional study** was conducted at the medical schools of the University of Milano-Bicocca and the University of Verona in 2019/2020.

This study enrolled **253 second-year medical students** (female= 142, 56.13%; main age = 20.42 year, SD=1.14), 99 (39.13%) from University of Milano-Bicocca and 154 (60.87%) from University of Verona.

Pearson's zero-order correlation coefficients (r) were computed to examine the associations between the three dimensions. To test the indirect effect of AS on E through the variable mediator EI, a mediation analysis was performed using the **Structural Equations Modelling (SEM)**.



Aim

The aim of this study was to further explore the **associations of EI and AS with empathy** in undergraduate **medical students** and to test the **mediating role of EI** on the association between AS and empathy.

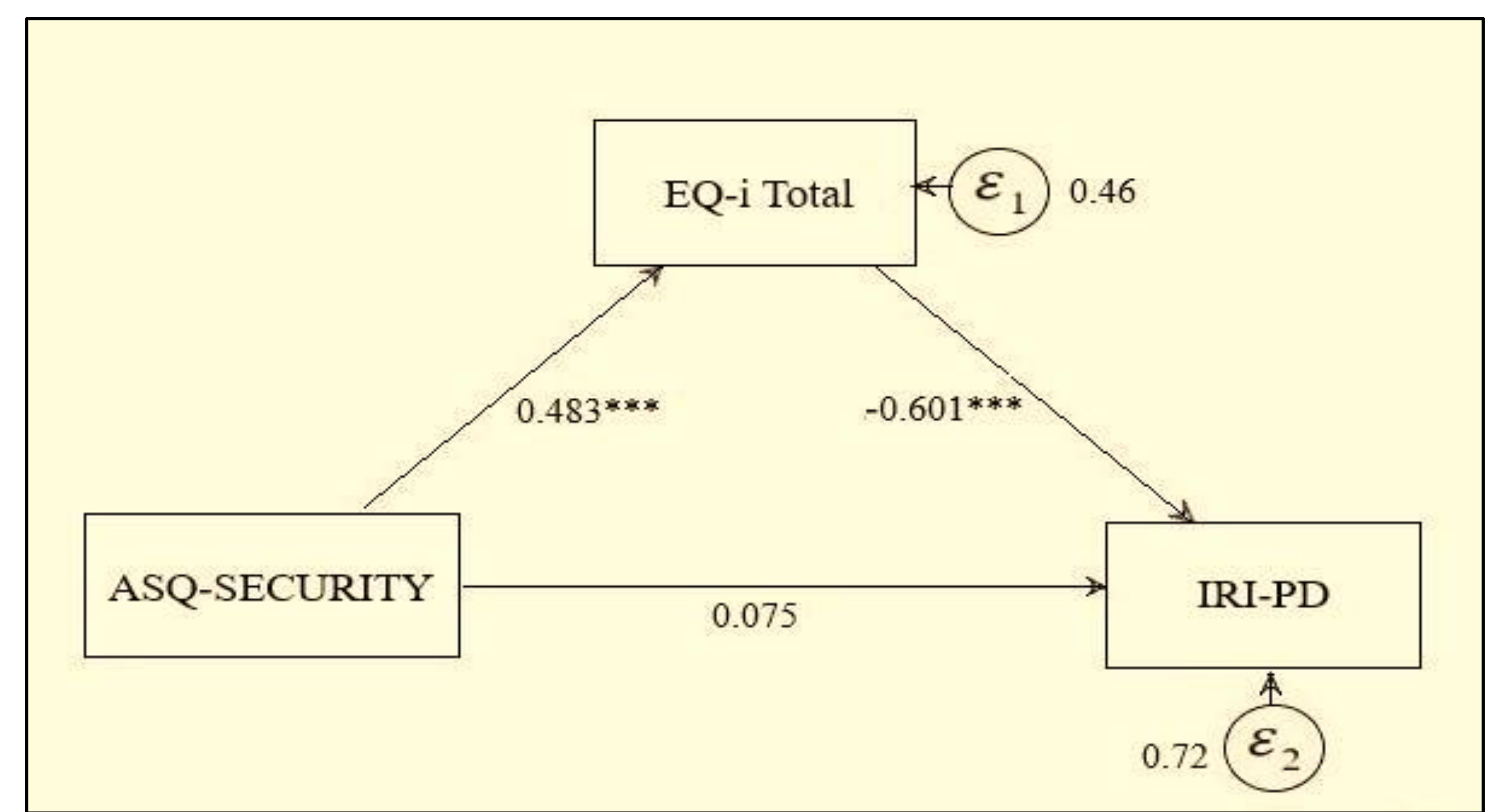
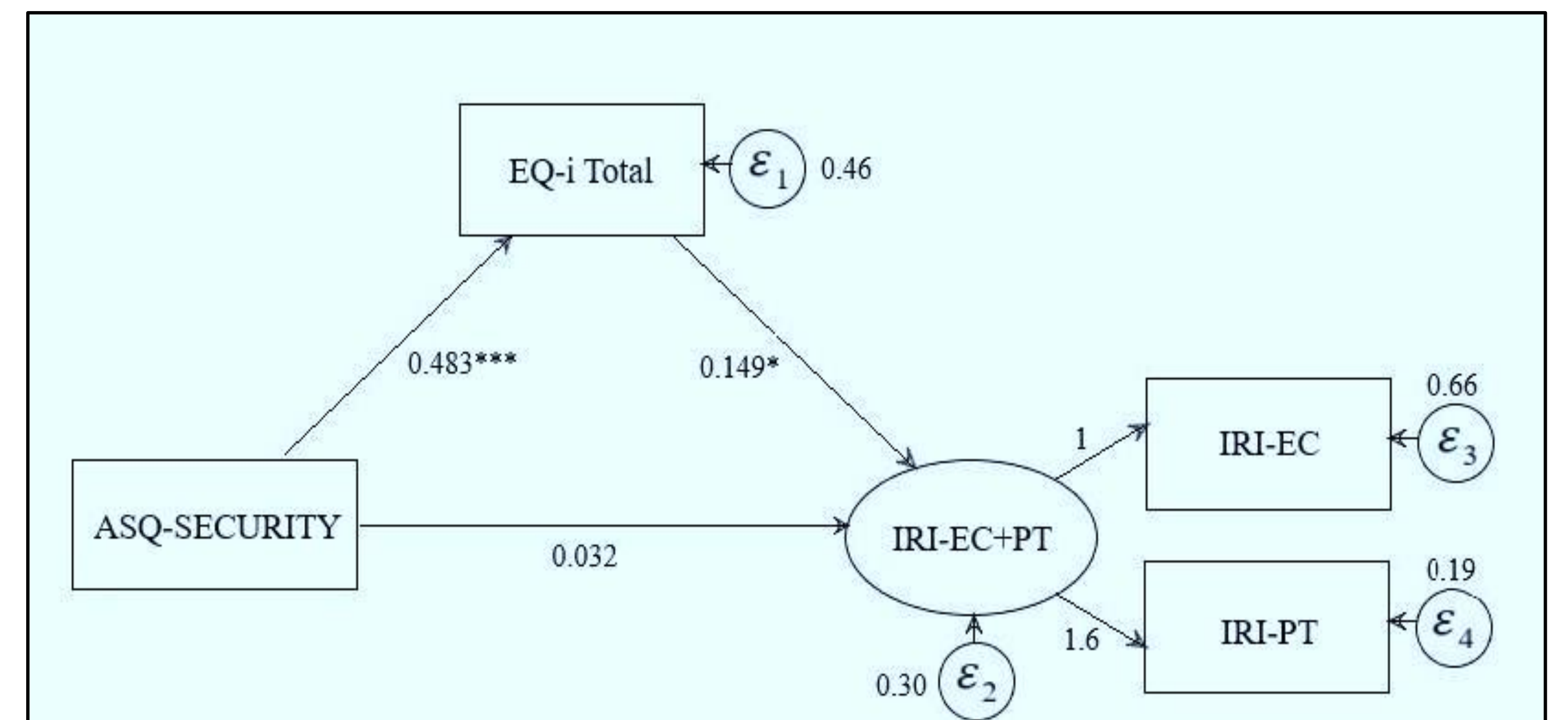
Results

CORRELATION:

ASQSECURITY positively correlated to IRI-EC ($r = 0.17$, $p = 0.008$), IRI-PT ($r = 0.24$, $p < 0.001$) and EQ-i Total score ($r = 0.74$, $p < 0.001$), and it was negatively related to IRI-PD ($r = -0.33$, $p < 0.001$).

MEDIATION MODEL:

Individuals with same levels of AS and higher scores on EQ-i had higher scores ($\beta=0.072$, $p=0.033$) on the empathy latent factor (at the basis of EC and PT) and lower scores ($\beta=-0.290$, $p<0.001$) on Personal Distress than those with lower EQ-i scores.



Discussion

Our results highlighted a perfect mediation: **EI completely mediated the relation between AS and empathy** [11].

The three dimensions of the IRI were divided into two sub-dimensions: a latent factor (EC+PT) and the observed Personal Distress score. Overall, medical students with the same level of ASQ-SECURITY and with higher EQ-i Total scores had higher scores of the latent empathy factor than those with lower EQ-i scores. In contrast, individuals with higher EQ-i Total scores had on average lower Personal Distress scores than those with lower EQ-i Total scores. **Higher levels of EI had a favorable impact on the latent empathy (EC+PT)**, whereas it may be considered a **protective factor against Personal Distress**.

Since **EI is a dispositional characteristic malleable to modification**, this construct should be considered when designing **educational interventions** and programs to promote medical students' empathy and well-being in interpersonal situations.

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