

Article

The Road Towards PTSD Symptomatology. The Role of Personality, Uncertainty and Anxiety Sensitivity. A Two-Wave Prospective Mediation Study

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ABSTRACT

Introduction: There is significant amount of scientific literature regarding psychological variables that account as vulnerability/protective variables for the onset and maintenance of PTSD symptomatology. Among them, *Big Five* personality traits (openness, conscientiousness, extraversion, agreeableness and neuroticism). However, there is still little evidence regarding the underlying mechanisms that may explain that relationship. **Method:** A sample of 300 participants from Spanish general population ($M_{\text{age}} = 38.72$; 54.7% women) completed an on-line survey in two separated moments: personality traits, intolerance of uncertainty and anxiety sensitivity at T1, and PTSD symptomatology at T2, three months later. **Results:** Neuroticism ($\beta_{\text{standardised}} = .144$), intolerance of uncertainty ($\beta_{\text{standardised}} = .195$) and anxiety sensitivity ($\beta_{\text{standardised}} = .269$) at T1 predicted 25.5% of PTSD symptomatology at T2. Moreover, intolerance of uncertainty ($a_1 a_2 = .129$) and anxiety sensitivity ($b_1 b_2 = .119$) partially and complementary mediated the relationship between neuroticism at T1 and PTSD symptomatology at T2 ($c' = .144$). **Discussion:** This study is the first to analyse together, in a two-wave prospective study, the predictive capacity of personality traits, intolerance of uncertainty and anxiety sensitivity, over PTSD symptoms. These results have significant implications for future development of targeted prevention and intervention programs aimed to traumatic events survivors.

El Camino Hacia la Sintomatología de TEPT. El Rol de la Personalidad, la Incertidumbre y la Sensibilidad a la Ansiedad. Un Estudio Mediacional de Doble Fase

RESUMEN

Palabras clave:

PTSD
Cinco Grandes
Intolerancia a la incertidumbre
Sensibilidad a la ansiedad
Mediación

Introducción: Existe numerosa literatura científica sobre las variables psicológicas que constituyen un factor de riesgo/protección para el desarrollo y mantenimiento del TEPT. Entre ellas, los rasgos de personalidad del *Big Five*. Sin embargo, hay poca evidencia sobre los mecanismos subyacentes que pueden explicar esta relación. **Método:** Una muestra de 300 personas de la población general española ($M_{\text{edad}} = 38.72$; 54.7% mujeres) completaron una encuesta on-line en dos momentos de medida: rasgos de personalidad, intolerancia a la incertidumbre y sensibilidad a la ansiedad en T1, y sintomatología de TEPT en T2, tres meses después. **Resultados:** El neuroticismo ($\beta_{\text{estandarizada}} = .144$), la intolerancia a la incertidumbre ($\beta_{\text{estandarizada}} = .195$) y la sensibilidad a la ansiedad ($\beta_{\text{estandarizada}} = .269$) en T1 predijeron el 25.5% de la sintomatología de TEPT en T2. Además, la intolerancia a la incertidumbre ($a_1 a_2 = .129$) y la sensibilidad a la ansiedad ($b_1 b_2 = .119$) mediaron parcialmente la relación entre el neuroticismo en T1 y la sintomatología de TEPT en T2 ($c' = .144$). **Discusión:** Los resultados hallados ofrecen implicaciones significativas para el futuro desarrollo de programas de prevención e intervención específicos para supervivientes de eventos traumáticos.

Introduction

DSM-5-TR defines Posttraumatic Stress Disorder (PTSD) as the presence of clinically significant symptomatology characterised by intrusion symptoms, avoidance of stimuli associated with the traumatic event, negative alterations in cognitions and alterations in arousal and reactivity, after having experienced one or more traumatic event(s) (American Psychiatric Association [APA], 2022).

Since it was first included into the DSM-III (APA, 1980), much research across the globe have been published with different etiological and gnoseological models that aimed to provide some light regarding which are the main risk and protective factors for its development (Bienvenu et al., 2021). For instance, if one makes a search on PubMed database with the terms ((vulnerability[Title/Abstract]) AND (model[Title/Abstract])) AND (PTSD[Title/Abstract]), there are 205 publications in the period from 1992 to 2024. Within these models, many different variables have been studied in relation to PTSD (i.e., cognitive, social, genetical, demographic or personality factors, just to name a few).

Personality has undoubtedly been one of the most studied variables in relation to PTSD onset and maintenance (Hyatt et al., 2024; Jakšić et al., 2012), as it has been researched in many other mental disorders (Tackett & Mullins-Sweatt, 2021; Watson & Naragon-Gainey, 2014). Personality traits describe individuals' general tendency to specific patterns of thoughts, emotions, and behaviours, that tend to remain stable during the years and are consistent throughout different situations/contexts (McCrae & Costa, 2003). Thus, given the pivotal role of personality components on people's lives, researchers have widely analysed the influence and explanatory power that it might have on many different mental disorders. Among the many studies in this regard published in the latest years, there are two which would be interesting to highlight, as they reflect this central role of personality on psychopathological processes. Oltmanns et al. (2018) analysed how general factors of psychopathology, a general factor of personality, and personality disorders might show some degree of convergence that would indicate an underlying existing continuum, getting empirical evidence that supported this assumption on a large adults sample. Similarly, Widiger et al. (2019) analysed the role of personality traits in a hierarchical model of psychopathology, finding that these traits constituted a foundational base for explaining the onset and maintenance of the majority of DSM-5 disorders.

Returning specifically to PTSD, according to the well-known review conducted by Jakšić et al. (2012), personality traits would be related to PTSD symptomatology in four aspects: (1) resilience; (2) vulnerability; (3) behavioural manifestations; (4) Posttraumatic Growth (PTG). More specifically, PTSD symptomatology would be positively associated with neuroticism, while it would be negatively related to extraversion and conscientiousness (Jakšić et al., 2012). Moreover, there have even been proposals that have attempted to provide profiles of PTSD symptoms in relation to the *Big Five* personality traits (Contractor et al., 2016; Hyatt et al., 2024). Most recently, using the network theory approach, *Big Five* personality traits have proved to be intrinsically related to PTSD symptomatology, especially neuroticism, which was associated with persistent negative emotions, a core variable for the PTSD/*Big Five* network (Graziano et al., 2023). Jankovic et al. (2021) found that high neuroticism, extraversion and conscientiousness and low

openness and agreeableness were related to higher reported PTSD symptoms in a workplace violence sample. However, the specific reasons for these relationships were not analysed.

Therefore, there is little room for doubting the relevant role of personality in PTSD development and maintenance. However, there is an ontological question that may arise, that, for its simplicity, may be initially disregarded: what we talk about when we talk about personality? And, more specifically, what are the processes or mechanisms that produce the effects of personality traits on psychological disorders (PTSD in this case)? Because one thing is to know that two variables are associated (personality traits and PTSD) and another very different, to understand the mechanisms underlying that association. We acknowledge that these questions are still greatly controversial in psychology, and we do not aim to offer a clear-cut explanation, but rather a possible path to be empirically and thoroughly researched.

Regarding the first of these two questions, it is important to remember that personality models, as it has been already indicated, provide a description of individuals' thoughts, emotions and behaviour patterns consistent throughout time and contexts. According to the Web of Science, in the case of the *Big Five* model, more than 59 meta-analyses (34 in the last five years) can be found in scientific literature on the significant relationship of the *Big Five* with various relevant behaviours using the search query "TI= 'meta-analysis' AND 'Big Five'". Unfortunately, none of these studies provide an explanation for these patterns' manifestation, causing a significant gap in the role that other psychological variables may have in explaining the personality manifestations (Möttus et al., 2020).

In this respect, Altungy et al. (2025) have recently proposed an empirically backed theoretical framework for trying to, at least partially, understand what may underly personality traits. They studied how intolerance of uncertainty ("incapacity for tolerating the aversive responses caused by the perception of lacking information in a situation and maintained by the perception associated with uncertainty"; Carleton, 2016, p. 31), anxiety sensitivity ("fear of physiological sensations related to anxiety, based on the belief that these sensations are threatening on a physical, psychological, or social level"; Reiss, 1987) and metacognition (conscience and management of one's thoughts"; Kuhn & Dean, 2004, p. 270) were related to *Big Five* personality traits. Their findings showed that neuroticism was significantly and positively associated to intolerance of uncertainty and anxiety sensitivity, while extraversion and agreeableness were related to intolerance of uncertainty. Moreover, in the case of neuroticism, intolerance of uncertainty and anxiety sensitivity accounted for almost 50% of its variance. These results may lead to an understanding that, when we talk about personality (especially, neuroticism), we are significantly talking about how an individual thinks, feels and behaves in the face of uncertainty and anxiety (Altungy et al., 2025).

At this point, keen readers will have already noticed how these results may also provide an initial path towards solving the second question posed before: what are the mechanisms that produce the effects of personality traits on psychological disorders (PTSD)? In fact, both intolerance of uncertainty (Arditte Hall & Arditte, 2024; Badawi et al., 2022; Hernández-Posadas et al., 2024) and anxiety sensitivity (Chiu et al., 2024; Kreminski et al., 2022) have proven to be relevant vulnerability factors in the development and

maintenance of PTSD. These variables showed a significant positive association with that symptomatology. Intolerance of uncertainty seems to enhance PTSD reactions, especially those related to avoidance, hyperarousal and emotional numbing symptom clusters (Hernández-Posadas et al., 2024). Anxiety sensitivity has been more strongly related to the intrusion and hyperarousal symptom clusters (although via mediation of negative affect for the later) (Kreminski et al., 2022).

Therefore, it could be possible that these two transdiagnostic variables may conform part of these underlying mechanisms that explain why personality traits constitute a vulnerability/risk factor for PTSD symptomatology after the experience of a traumatic event.

This is precisely the general goal of the present research: to analyse how intolerance of uncertainty and anxiety sensitivity may play a significant role in the relationship between the *Big Five* personality traits and PTSD symptomatology, using a prospective design. To the author's knowledge, this would be the first study that has ever attempted this goal. Only Pistoia et al. (2018) analysed these variables in a sample of L'Aquila 2009 earthquake, but using Eysenck's Personality model (Eysenck et al., 1985). Moreover, their goal was to understand survivors' distress and emotional expertise among young adults. In addition, current study is a two-wave prospective one, in which PTSD symptomatology was measured 3 months after having measured the other key variables, being thus the first study of this kind so far, up to the knowledge of the authors.

Specifically, the hypothesis considered for this study were:

1. *Big Five* personality traits (openness, conscientiousness, extraversion, agreeableness and neuroticism – measured at T1) will predict PTSD symptomatology (measured at T2), once controlled the effect of intolerance of uncertainty and anxiety sensitivity (also measured at T1).
 - 1.1. Openness, extraversion and agreeableness traits will be negatively associated to PTSD symptomatology.
 - 1.2. Conscientiousness and neuroticism traits, intolerance of uncertainty and anxiety sensitivity will be positively associated to PTSD symptomatology.
2. Intolerance of uncertainty and anxiety sensitivity (at T1) will predict PTSD symptomatology (measured at T2), once controlled the effect of personality traits (measured at T1).
3. Intolerance of uncertainty and anxiety sensitivity (at T1) partially and positively mediate the relationship between neuroticism (at T1) and PTSD symptomatology (at T2).

Method

Participants

An initial power analysis was conducted using G*Power 3.1.9.7. ® in order to determine the minimum sample size required for the statistical analyses that were considered adequate for the study goals. For linear multiple regression analyses (which, as it will be explained, were the main analyses carried out), for a effect size f^2 of .05, an alpha of .05 and 3 predictors, the minimum sample size is of 218 participants.

This study included 300 participants from the Spanish general population ($M_{age} = 38.72$ years; 54.7% women, range: 18-85 years). Of these participants, at the first time of measurement (T1), 41.7% were married, 46% had basic or secondary education, and

52.7% were employed. At the second time of measurement (T2), 41% were married and 52.3% were employed (which represents almost no sociodemographic change in the interval between measures). Table 1 presents all the sociodemographic details of the sample.

Instruments

The following assessment instruments were used in the present research:

- a) An *Ad hoc* questionnaire for assessing the following sociodemographic variables: age, gender (self-identified), marital status, education level and employment status. The different categories for replying presented to participants can be consulted on table 1.
- b) The *NEO Five Factor Inventory* (NEO-FFI; Costa & McCrae, 1992; Spanish adaptation by Aluja et al., 2005). This self-report instrument was used to assess the Big Five personality traits. It consists of 60 items with a five-point Likert response scale, ranging from 0 (*completely disagree*) to 4 (*completely agree*). The NEO-FFI is comprised by 5 scales (Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness). The internal consistency index (Cronbach's α) in the current study for each scale was .82, .52, .54, .65, and .76, respectively.
- c) *The Intolerance of Uncertainty Scale* (IUS-27; Freeston et al., 1994; Spanish adaptation by Rodríguez et al., 2006). This questionnaire, which assesses levels of intolerance of uncertainty, consists of 27 self-report items answered using a 5-point Likert scale. Individuals with high scores tend to

Table 1
Sociodemographic Description of the Sample

Variables	Values*
<i>N</i>	300
Mean age (<i>SD</i>)	38.72 (15.76)
Gender (% women)	54.7
Civil status	
Single	38.3
Living with partner	8.7
Married	41.7
Divorced/Separated	6.6
Widow/er	0.7
Rather not say	4.0
Studies	
None	1.0
Primary or secondary	46.0
Professional formation	18.7
Bachelor's degree	26.3
Master or PhD	8.0
Working status	
Salaried	46.0
Self-employed	6.7
Unemployed	7.7
Student	32.0
Retired	4.7
Rather not say	3.0

Note. * All values are percentages if there is no further indication.

experience significant discomfort and emotional distress when facing uncertain situations. Cronbach's α for the global scale in the current study was excellent (.94).

d) The *Anxiety Sensitivity Index-3* (ASI-3; [Taylor et al., 2007](#); Spanish adaptation by [Sandín et al., 2007](#)). This questionnaire, which assesses levels of anxiety sensitivity, consists of 18 self-report items that measure the three components of this construct (fear of somatic experiences, fear of cognitive dyscontrol, and fear of external anxiety symptoms). Responses are given on a 5-point Likert scale. Cronbach's α for the global scale in the current study was excellent (.90), consistent with the latest review of the Spanish version of this instrument ([Altungy et al., 2023](#)).

e) The *PTSD Checklist for DSM-5* (PCL-5; [Weathers et al., 2013](#); Spanish adaptation by [Sanz et al., 2021](#)). The PCL-5 is a 20-item measure that assesses the presence and severity of posttraumatic stress symptoms according to the DSM-5 diagnostic criteria for PTSD. The items are answered using 5-point Likert-type scales. Higher scores indicate more clinically significant PTSD symptomatology. Cronbach's α for the global scale in the current study was excellent (.94), consistent with the latest review of the Spanish version of this instrument ([Sanz et al., 2021](#)).

Procedure

This research followed an *ex post facto* prospective design, using a convenience sample. Participants were recruited using the snowball method by 3rd and 4th year Psychology students who were previously instructed by the study researchers. These students were required to contact 6 people following the guidelines below to ensure the desired heterogeneity: (1) 3 participants should be women and 3 men; (2) 0-1 participants aged 18 to 30 years; 1-2 participants aged 31 to 51 years; and 1-2 participants over 51 years. There were two measurement moments: T1 (March 2022) and T2 (May 2022) – 3 months apart. The reason for this time between assessments was due to recruiting constraints, given that sample was accessed through the mentioned psychology students, whose semester went from February to May.

Students provided participants with a link to complete the battery of questionnaires. On the first page of the questionnaire, informed consent was requested, and information was provided about confidentiality. Participants were informed that the data they provided would be used exclusively for research purposes. Participants' responses were anonymous, and they received no incentive for their participation. They had to create a personal and secret code at T1 in order to link their answers at T2. Participants were instructed to not share this code with anyone, to guarantee their anonymity.

All data were treated in accordance with the Declaration of Helsinki, and the study was approved by the Ethics Committee of the Universidad Complutense de Madrid.

Statistical Analyses

All analyses were performed using the Statistical Package for the Social Sciences (SPSS-22®). Initially, frequency and descriptive analyses were conducted to study the sociodemographic characteristics of the sample and to check the normality assumption of all data.

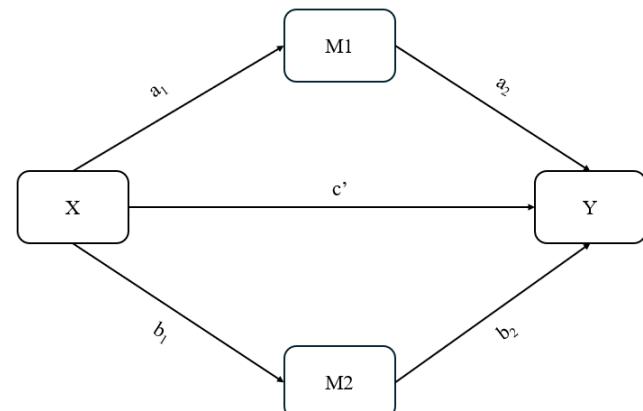
Next step consisted in performing a Pearson's correlation analysis (given that all key variables followed a normal distribution), to analyse the possible existence of correlations between the variables of interest in the present research (previous necessary step for running regression analyses): openness, conscientiousness, extraversion, agreeableness, neuroticism, intolerance of uncertainty and anxiety sensitivity (T1), and PTSD symptomatology (T2).

Subsequently, multiple linear hierarchical regression models would be built, being the criteria variable the PTSD symptomatology at T2, and the predictors, included step-by-step: (1) personality traits (one trait per model); (2) intolerance of uncertainty; (3) anxiety sensitivity; (4) age and gender (all at T1). Note that, as hinted in the previous paragraph, only those variables that proved to have a significant correlation with PTSD symptomatology at T2 would be included in the model. Multiple linear hierarchical regression models must meet the following criteria for being considered appropriate: (1) Durbin-Watson value must be close to 2 (which would indicate no autocorrelation between variables); (2) Tolerance values should be over .1 and VIF values under 10, which would indicate an absence of significant multicollinearity between the variables included in each step of the model.

Last set of analyses would consist of mediation analyses following [Hayes \(2018\)](#) PROCESS Macro ®. The mediation model that will be used for these analyses will be Model 4, as it allows to analyse the parallel mediation influence of two variables (M1; M2), while maintaining the controlled direct effect that the predictor (X) has over the criteria variable (Y) ([Hayes, 2018](#)). In [Figure 1](#) it can be consulted the graphical representation of the proposed mediation model. Mediation models will only be run if: (1) one or more personality traits at T1 is/are included in the regression model for PTSD symptomatology at T2; (2) intolerance of uncertainty and/or anxiety sensitivity at T1 are also included in these regression models. If this is the case, personality traits at T1 will be the criteria variable (X), intolerance of uncertainty and anxiety sensitivity at T1 will be the mediators (M1 and M2), and PTSD symptomatology at T2 will be the criteria variable (Y).

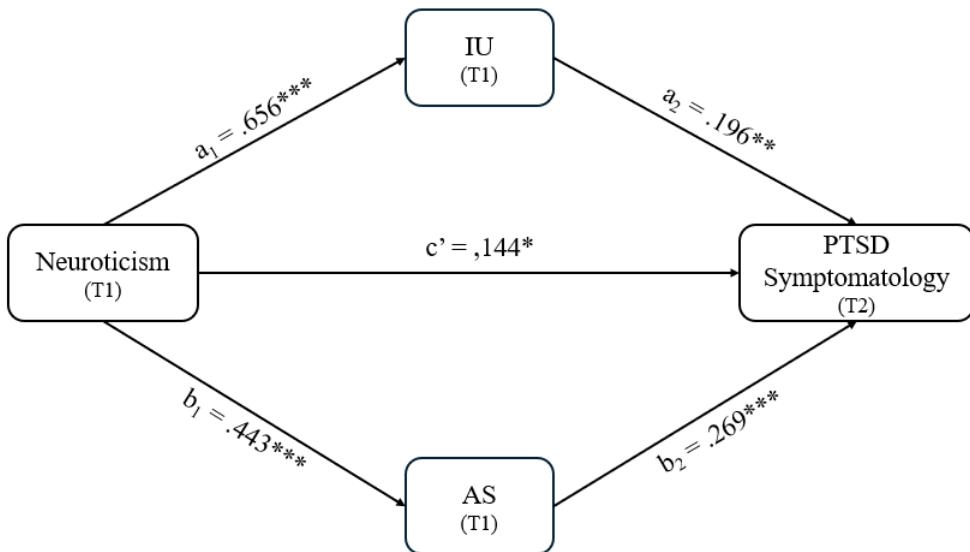
Following [Hayes \(2018\)](#), pp. 82-86, 93-104, 149-153), in order to establish that the mediation is a significant one, the indirect effect 95%

Figure 1
Graphical Representation of the Mediation Model That Will Be Tested (Mediation Model 4; [Hayes, 2018](#))



Note. X = predictor; M1 = mediator 1; M2 = mediator 2; Y = criteria.

Figure 2
Mediation Model Representation



Note. a₁ = regression coefficient of X on M1; a₂ = regression coefficient of X on M2; b₁ = regression coefficient of M1 on Y; b₂ = regression coefficient of M2 on Y; c' = regression coefficient of the direct effect of X on Y; the product of a₁ and b₁ (a₁b₁) = represents the specific indirect effect of X on Y through M1, that is, the effect of X on Y mediated by M1; the product of a₂ and b₂ (a₂b₂) = represents the specific indirect effect of X on Y through M2, that is, the effect of X on Y mediated by M2; the sum of the products a₁b₁ and a₂b₂ = represents the total indirect effect of X on Y, that is, the effect of X on Y mediated by M1 and M2. **p* < .05; ***p* < .01; ****p* < .001. Adapted from Hayes (2018).

confidence interval, calculated using bootstrap resampling, must not include 0 (minimum and maximum values of the interval were both over 0). That would indicate that the indirect effect of the independent variable through the mediators is positive. Explained in detail, Hayes (2018) three criteria that mediation analyses must met are:

1. There was a significant relationship between neuroticism (predictor: X) and both mediators: intolerance of uncertainty (M1) and anxiety sensitivity (M2), represented by regression coefficients a₁ and a₂.
2. There must be a significant relationship between M1 and M2 with Y (criteria: PTSD symptomatology), once controlled the effect of X, represented by regression coefficients b₁ and b₂ (figure 2).
3. The direct effect of X on Y, reflected in figure 2 by the coefficient c', must be statistically significant. Total indirect effect of X on Y, mediated jointly by M1 and M2, at the 95% confidence interval of this total indirect effect, calculated through 5,000 bootstrap resamples, must not include zero.

There were no missing data in the sample, as participants had to answer the survey via an online platform which made all answers compulsory.

Results

The initial descriptive analyses indicated that the data followed a normal distribution, with skewness and asymmetry parameters between ± 2 (Martinez-Arias et al., 2015).

Given that data followed a normal distribution, as indicated before, Person's correlation analysis was performed. Results indicated that PTSD symptomatology (measured by the PCL-5 at T2) significantly correlated positively with intolerance of uncertainty ($r = .443$;

$p < .001$) and anxiety sensitivity ($r = .444$; $p < .001$) levels (measured by IUS-27 and ASI-3 scales) and neuroticism trait ($r = .392$; $p < .001$; measured by NEO-FFI) at T1. The four remaining personality traits at T1 (openness, conscientiousness, extraversion and agreeability) did not show significant correlation with PTSD symptoms. Even though it is not the goal of the present research, it is important to highlight that, consistent with results found by Altuny et al. (2025), intolerance of uncertainty and anxiety sensitivity showed their higher levels of correlation with neuroticism trait. Full correlation results can be found on table 2.

Correlation analysis was considered to be the previous step towards multiple linear hierarchical regression analyses, including in the later as predictors only those variables that in the previous analysis showed a significant correlation with the criteria (PTSD symptomatology at T2). Therefore, provided the aforementioned results, only one regression analysis was run, as there was only one personality trait that showed significant correlation with the criteria: neuroticism.

The linear regression analysis was conducted hierarchically by steps, being the inclusion order of predictors (all measured at T1): (1) neuroticism; (2) intolerance of uncertainty; (3) anxiety sensitivity; (4) age and gender (as control variables). As indicated, criteria was PTSD symptomatology at T2. Model 3 (which included as predictors neuroticism, intolerance of uncertainty and anxiety sensitivity at T1) proved to be the one which explained a higher percentage of variance of the PTSD symptomatology at T2, predicting 25.5% of it ($R^2_{adjusted} = .255$; $p < .001$; $F = 19.350$), with a Durbin-Watson coefficient of 2.002. Within this model, anxiety sensitivity was the most relevant variable ($\beta_{standardised} = .269$; $r_{partial} = .248$; $p < .001$), followed by intolerance of uncertainty ($\beta_{standardised} = .195$; $r_{partial} = .155$; $p = .008$) and neuroticism ($\beta_{standardised} = .144$; $r_{partial} = .125$; $p = .031$).

Table 2
Correlation Analysis Results

	<i>M</i> (<i>S.D.</i>)	Skewness/ Kurtosis	PTSD	IU	AS	N	O	C	E	A
PTSD	18.18 (14.62)	0.868/ 0.064		-						
IU	64.79 (16.87)	0.225/ -0.504	.443***		-					
AS	14.80 (10.45)	1.241/ 1.724	.444***	.570***		-				
N	24.01 (8.12)	-0.127/ -0.397	.392***	.656***	.443***		-			
O	34.14 (5.66)	-0.082/ -0.156	.056	-.078	.059	-.150**		-		
C	36.65 (5.55)	-0.768/ 0.479	-.030	-.145*	-.021	-.197***	.659***		-	
E	29.81 (4.48)	-0.328/ 0.222	.063	-.016	.155**	-.091	.362***	.372***		-
A	37.17 (6.26)	-0.573/ 0.238	-.027	-.062	.011	-.306***	.338***	.309***	.404***	-

Note. A = Agreeableness; AS = Anxiety Sensitivity; C = Conscientiousness; E = Extraversion; IU = Intolerance of Uncertainty; N = Neuroticism; O = Openness; PTSD = PTSD symptomatology; **p* < .05; ***p* < .01; ****p* < .001.

Table 3
Regression Analysis Results (Criteria Variable: PTSD Symptomatology at T2)

Model	Predictors	$\beta_{\text{standardised}}$	r_{partial}	<i>p</i>	Tolerance	FIV
1	Neuroticism	.392	.392	< .001	1.000	1.000
		$R^2_{\text{adjusted}} = .150; F = 53.952; p < .001$				
2	Neuroticism	.177	.149	.010	.569	1.756
	IU	.327	.269	< .001	.569	1.756
		$R^2_{\text{adjusted}} = .209; F = 23.083; p < .001$				
3	Neuroticism	.144	.125	.031	.562	1.778
	IU	.195	.155	.008	.472	2.118
	AS	.269	.248	< .001	.667	1.500
		$R^2_{\text{adjusted}} = .255; F = 19.350; p < .001$				
4	Neuroticism	.147	.122	.036	.512	1.954
	IU	.195	.154	.008	.472	2.118
	AS	.266	.245	< .001	.662	1.512
	Age	-.015	-.017	.773	.929	1.077
	Gender	.020	.022	.703	.913	1.095
		$R^2_{\text{adjusted}} = .251; F = 0.119; p = .888$				

Note. AS = Anxiety Sensitivity; IU = Intolerance of Uncertainty.

Age and gender had no significant statistical weight in the regression model. The positive sign of all beta values indicates that, the higher an individual's discomfort towards anxiety symptoms and uncertainty, and the higher his/her emotional instability, the more probable is the presence of higher PTSD symptomatology scores in a future moment. Whole regression analysis can be consulted on [table 3](#).

The last set of analyses run in the present research consisted in testing the mediation model proposed for PTSD symptomatology ([figure 1](#)), using [Hayes \(2018\)](#) PROCESS Macro for SPSS ®, model 4. As just neuroticism at T1 proved to predict PTSD

symptoms at T2, only one mediation model will be tested, with neuroticism (T1) as predictor (X), intolerance of uncertainty (T1) as mediator 1 (M1), anxiety sensitivity (T1) as mediator 2 (M2) and PTSD symptomatology (T2) as criteria (Y).

Results of the mediation analysis indicated that the three conditions marked by Hayes (2018) for a significant mediation were met.

Regarding the first condition, simple linear regression analysis of X over M1 showed that neuroticism significantly explained 42.9% of intolerance of uncertainty variance ($\beta_{\text{standardised}} = .656; t = 15.012; p < .001$). Simple linear regression analysis of X over M2 showed that neuroticism significantly explained 19.3% of anxiety sensitivity variance ($\beta_{\text{standardised}} = .443; t = 8.528; p < .001$).

About the second condition, the multiple linear regression analysis of X, M1, and M2 on Y revealed that intolerance of uncertainty (M1), after controlling for the effect of neuroticism (X) and the other mediator variable – anxiety sensitivity (M2), showed a statistically significant regression coefficient on PTSD symptomatology ($\beta_{\text{standardised}} = .196; t = 2.691; p = .008$). Likewise, anxiety sensitivity (M2), after controlling for the effect of neuroticism (X) and the other mediator variable – intolerance of uncertainty (M1), showed a statistically significant regression coefficient on PTSD symptomatology ($\beta_{\text{standardised}} = .269; t = 4.399; p < .001$). Moreover, the multiple linear regression analysis of X, M1, and M2 on Y also revealed that neuroticism (X), after controlling for the effect of intolerance of uncertainty (M1) and anxiety sensitivity (M2), showed a statistically significant regression coefficient on PTSD symptomatology ($\beta_{\text{standardised}} = .144; t = 2.166; p = .031$). In fact, the regression model of the three variables (X, M1, and M2) explained 26.3% of the total variance of PTSD symptomatology (Y).

Lastly, regarding the third condition, the direct effect of neuroticism (X) on PTSD symptomatology (Y), reflected in [figure 2](#) by the coefficient c' , was statistically significant (direct

effect = 0.259; $t = 2.166$; $p = .031$). Total indirect effect of neuroticism (X) on PTSD symptomatology, mediated jointly by intolerance of uncertainty (M1) and anxiety sensitivity (M2), was also significant, as the 95% confidence interval of this total indirect effect (standardised indirect effect = 0.247, 95% CI = 0.1381 – 0.3643). The analyses also revealed that the specific indirect effects of intolerance of uncertainty (specific indirect effect of M1 = 0.128, 95% CI = 0.0150 – 0.2440) and anxiety sensitivity (specific indirect effect of M2 = 0.119, 95% CI = 0.0567 – 0.1822) were statistically significant.

Summarising mediation analysis results, it can be said that intolerance of uncertainty and anxiety sensitivity partially (as direct effect of neuroticism over PTSD symptomatology remains significant) and complimentary (as the signs of direct and indirect effects are all positive) mediate the relationship between neuroticism and PTSD symptomatology. A graphical representation of the mediation model can be checked on [figure 2](#).

Discussion

Current research started with the aim of trying to combine the different existing models in psychopathology that have tried to offer some light regarding which are the vulnerability factors for PTSD symptomatology. The results obtained partially confirmed the working hypotheses.

Hypothesis 1 postulated that the five personality traits of the *Big Five* model (openness, conscientiousness, extraversion, agreeability and neuroticism), measured at T1, would predict PTSD symptomatology at T2, once controlled the effect of intolerance of uncertainty and anxiety sensitivity at T1. Results indicated that this hypothesis was only confirmed for neuroticism, the only personality trait at T1 that significantly predicted PTSD symptomatology at T1. These results are consistent with existing scientific literature, where neuroticism has been systematically identified as the most important personality trait in relation to PTSD symptomatology ([DiGangi et al., 2013](#); [Lee et al., 2020](#); [Soler-Ferreria et al., 2014](#)). The remaining four personality traits did not show a significant predictive capability, what contradicts previous research on the field ([Jakšić et al., 2012](#)). However, as [Altungy et al. \(2025\)](#) already hinted, these results can be explained by the fact that one of the main limitations of previous research on the relationship between personality traits and PTSD symptomatology is that the vast majority did not consider the possible effect that other psychological variables might have in explaining this symptomatology. In the current study, intolerance of uncertainty and anxiety sensitivity were jointly included in the analyses, and being the two the most significant variables in its relationship with PTSD symptomatology, it may well be that they “harvested” the possible effect of the aforementioned personality traits that, in this case, showed no significant relationship with PTSD symptomatology. In addition, it may be noted that, to the authors’ knowledge, this first two-wave prospective study that tests the predictive capacity of *Big Five* personality traits, and which, in addition, controlled the effect of third variables (intolerance of uncertainty and anxiety sensitivity in this case).

As so, hypothesis 2 was wholly confirmed, with intolerance of uncertainty and anxiety sensitivity (at T1), significantly predicted PTSD symptomatology at T2, once the effect of neuroticism (at T1) was controlled. These results are consistent with previous studies

([Arditte Hall & Arditte, 2024](#); [Badawi et al., 2022](#); [Chiu et al., 2024](#); [Hernández-Posadas et al., 2024](#); [Kreminski et al., 2022](#)). These results are innovative in two ways: (1) it is the first empirical study that analyse together the explanatory capacity of these two variables, controlling the effect of neuroticism; (2) it is the first two-wave prospective study that tests the predictive capacity of the aforementioned variables.

Regarding hypothesis 3, results from the mediation analysis based on [Hayes \(2018\)](#) proposal also confirm it. Intolerance of uncertainty and anxiety sensitivity (at T1) partially and positively mediate the relationship between neuroticism (at T1) and PTSD symptomatology (at T2). This is the first time that a mediation model for the relationship between neuroticism and PTSD symptomatology have been tested, including intolerance of uncertainty and anxiety sensitivity as mediators. Moreover, results from the mediation analysis indicated that these two variables partially and complementary mediated that relationship. These results have strong implications on intervention and prevention programs for people who have gone through (or may be frequently exposed) to traumatic events.

Unfortunately, it may be impossible to always prevent the occurrence of traumatic events, in spite of many efforts to do so. Personality traits, by its very nature, cannot either be altered or modified (at least, not without a very long therapeutic process – [Allemand & Flückiger, 2017](#)). Only accounting for these two variables, it may seem therefore that, for those individuals who may have a neurotic personality who go through a traumatic experience, they would be doomed to suffer higher rates of PTSD symptomatology, no matter what. However, in the light of the results found in the current research, the perspective would be quite different (and more optimistic too). As it has been explained, the relationship between neuroticism and PTSD symptomatology is positively mediated by intolerance of uncertainty and anxiety sensitivity. These two variables, unlike personality traits, are more easily modifiable, with targeted and brief psychological interventions ([Fitzgerald et al., 2021](#); [McEvoy & Erceg-Hurn, 2016](#)) being effective for this. Therefore, psychologists may train people (especially those who prove to have higher levels of neuroticism) in coping strategies (i.e., psychoeducation in emotions, stress management, cognitive restructuring), for managing uncertainty and anxiety sensations, resulting, according to this research results, in lower probabilities of them developing impairing PTSD symptoms after living a traumatic event. This training can be implemented as a prevention program (i.e., for security forces, emergency services workers, health professionals) or as the base for an intervention program with traumatic events survivors displaying PTSD symptomatology. In this second case, already proven effective trauma-focussed CBT therapies ([Jericho et al., 2022](#)) could benefit from including in their programs modules that directly target intolerance of uncertainty and anxiety sensitivity management. This might be especially relevant in cases where PTSD symptomatology result from adverse experiences lived during childhood ([Cea et al., 2025](#)), a critical developmental moment when some of foundational aspects of personality are being shaped ([Slobodskaya, 2021](#)) – whilst therapists can not directly address therapeutically personality traits to modify them, that should not deter them to work with related variables that can be modified, given the appropriated tools.

In spite of the avant-grade results provided by current research, there are some limitations that should be also mentioned in order to provide a better ground for future research in this area. First, even though it was a two-wave prospective study, the time span between the two measurements was only of three months. It would be beneficial to increase this interval between measurements to, at least, one year, allowing it to be conceived as a longitudinal study. Second, this research counted with a convenience sample from the Spanish general population who not necessarily had lived a traumatic event. In order to obtain further support for these initial results and for assuring the utility of potential tailored prevention/intervention programs, it would be interesting that future research had a specific sample comprised of traumatic events survivors, that could guarantee the generalisability of these results. In addition to this, current research worked with PTSD symptomatology, and not with PTSD diagnosis. Even though this might be relevant as a first approach to the matter, future research would benefit from a replication using a sample with a PTSD diagnosis made by clinicians. This would strengthen the validity of current findings beyond the realm of symptomatology. Third, the sample was recruited by psychology students through a snowball procedure. In an attempt to reduce possible bias and guarantee sociodemographic representativity, students were given a set of instructions for participants recruiting. Nonetheless, in the future it might be convenient to count with a non-convenience sample drawn randomly from general population and, if possible, from different social, economic and cultural backgrounds. Fourth, in the current research some scales showed a valid but low internal consistency levels (extraversion and openness subscales). This might represent a limitation in relation to the results obtained regarding these two personality traits, and, therefore, future research should pay especial attention to how they are measured. In this regard, it could be convenient to add to the self-report measurements clinical-administered inventories that might decrease the risk of bias in the replies. Fifth, it is important to highlight the moderate Cronbach's alphas that some of the personality traits measurement obtained. This has to be taken into account when considering the results obtained, as, perhaps, in future replications where these measures obtain higher alphas, some other personality traits might also result relevant in the models – specially for the extraversion and agreeableness traits, which in Altungy et al. (2025) proved to be significantly related to intolerance of uncertainty, and which have been also already related to PTSD symptomatology (Jankovic et al., 2021).

Lastly, regarding the future lines of research that may come from the present study, the most important one has already been described: preparation of prevention and intervention programs for PTSD symptomatology. Results provided in the present research pave ground for empirical knowledge that allow the creation of tailored programs that, in future empirical research, should test their effectiveness. In addition, future research should focus on replicating these results with a trauma victims' sample, in order to obtain stronger ecological validity. Moreover, even though the two-wave prospective design of current research has been innovative, the 3-month interval between measurements should be increased in the future to, at least, 6 months (and, ideally, 12 months), in order to capture the development and progression of PTSD symptomatology more effectively. Another improvement for future research would

be to include measures of past trauma history, personal coping strategies or resilience/post-traumatic growth. Even though some of these variables were considered to be included in the present study, they were finally not added to it in an attempt to balance the total length of the survey (in order not to make it too long, which might affect the quality of participants responses) with the inclusion of other undoubtedly relevant variables.

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