Peertechz

CLINICAL GROUP

OPEN JOURNAL OF Trauma OPEN ACCESS JOURNAL

ISSN: 2640-7949 DOI: https://dx.doi.org/10.17352/ojt

Research Article

"Perrotta Ego Hypertrophy Investigation Questionnaire (PEHI-Q)": Development, Regulation, and Validation of a Psychometric Tool to Investigate the Clinical Aspects of Ego Hypertrophy

Giulio Perrotta* and Stefano Eleuteri

Department of Psychology, Universitas Mercatorum, Rome, Italy

Received: 20 May, 2025
Accepted: 10 June, 2025
Published: 11 June, 2025

***Corresponding author:** Giulio Perrotta, Department of Psychology, Universitas Mercatorum, Rome, Italy, E-mail: info@giulioperrotta.com

ORCiD: https://orcid.org/0000-0003-0229-5562

Keywords: Ego hypertrophy; Ego; Narcissism; Egocentrism; Infantilism; Egoism

https://www.clinsurggroup.us

Check for updates

Abstract

Introduction: In literature, the concept of egoism is associated with the psychic ego instance under hypertrophic conditions; however, there are currently no psychometric instruments capable of distinguishing the functional form (self-love) from its dysfunctional variants (infantilism, egocentrism, and narcissism).

Aim: A validation study was conducted to assess whether the proposed psychometric instrument can reliably and validly investigate the efficiency of the ego psychic instance in relation to the hypotheses of hegonic hypertrophy.

Materials and methods: A new psychometric instrument was developed for administration to a selected clinical population (144 males/females, aged 16-70 years, M: 40.2, SD: 16.4) and was compared with a previously used instrument (Narcissistic Personality Inventory, NPI). This comparison aimed to investigate the efficacy of the ego psychic instance, clinically assess the level of subjective egoism, and ultimately validate the new instrument. A control group with similar characteristics was selected.

Results: Statistical analysis revealed that the psychometric test possesses a well-defined and stable construct, with the variables accurately represented and positively correlated with another already validated construct.

Conclusions: The Perrotta Ego Hypertrophy Investigation Questionnaire, first edition (PEHI-Q), is a valid, efficient, and stable psychometric tool for examining the clinical aspects of ego hypertrophy.

Abbreviations

PEHI-Q: Perrotta Ego Hypertrophy Investigation Questionnaire; PEHI-T: Perrotta Ego Hypertrophy Investigation Theory; PEHI-M: Perrotta Ego Hypertrophy Investigation Model; NPI: Narcissistic Personality Inventory; PNI: Pathological Narcissism Inventory; NGS: Narcissistic Grandiosity Scale; IES: Interpersonal Exploitativeness Scale; PES: Psychological Entitlement Scale; APA: American Psychiatric Association

Background

The construct of selfishness in the literature is extensively studied but only linked to the concept of narcissism when the topic under consideration involves entrepreneurship, morality, ethics, and competition [1-5]. Conversely, no research addresses functional and dysfunctional forms of egoism from a clinical perspective, except for neuroscientific issues related to the dimensions of grandiosity, perfectionism, dominance, and self-confidence [6,7]. However, all these studies reference the broader concept of "Ego," understood as

Citation: Perrotta G, Eleuteri S. "Perrotta Ego Hypertrophy Investigation Questionnaire (PEHI-Q)": Development, Regulation, and Validation of a Psychometric Tool to Investigate the Clinical Aspects of Ego Hypertrophy. Open J Trauma. 2025;9(1):017-026. Available from: https://dx.doi.org/10.17352/ojt.000049

a stable and organized psychic structure purposed to mediate drives and social needs, represented by two other conflicting instances, the Id and Superego, according to the Freudian model of classical psychoanalysis [8]. The Ego also manages defense mechanisms, which are psychic processes designed to protect the ego against overly intense drive experiences or other threatening situations [9-10]. In short, the ego is the center of consciousness, relating us to the reality in which we live, making us "aware" of all that is outside and inside us, thus promoting adaptation to the surrounding world. This is in contrast to the concept of the Self, which is the center of the psyche in its entirety and serves to self-define and provide us with an identity [11-13]. Several models examine Ego, including the Perrotta Integrative Clinical Interviews [14], which builds the psychopathological framework: in fact, Ego hypertrophy underlies all pathological forms of egoism, such as infantilism, egocentrism, and narcissism. The Perrotta Human Emotions Model [15] precisely explores these differences by identifying "healthy" egoism as self-love and "pure" egoism as other pathological forms, outlining substantial differences: healthy egoism is an adaptive consequence stemming from pleasure, promoting well-being, self-sufficient in nature, and fostering mental connections with others through empathy. In contrast, pure egoism is a trauma-based adaptive feeling arising from distress, leading to malaise, feeding off others' suffering and pain, and lacking the capacity for empathy, effectively generating distorted forms such as infantilism, egocentrism, and narcissism (in its extreme and clinical form). No existing research considers Egoism as the emotional vessel from which infantilism, egocentrism, and narcissism originate; only PHEM-2-v2 [15] identifies the feeling of selfishness as the root of the emotional reactions related to immorality, infidelity, manipulation, omnipotence, pride, submission, and vanity, which underlie dysfunctional forms of egoism, such as infantilism, egocentrism, and narcissism, while "healthy" egoism is represented by self-love, considered the emotional consequence of the emotional mode of pleasure. Furthermore, there is no empirical evidence supporting the existence of the Ego and the other psychic structures theorized by Sigmund Freud; this is because the concept of Ego pertains to psychic functioning rather than to structures of the mind, and consequently, without new evidence, this theorization remains the most credible [16]. Most studies focus on narcissism due to its significant implications in clinical psychology, psychiatry, and social psychology [17-19]; however, they fail to holistically consider other pathological forms of egoism. Measurements using today's known and validated psychometric tools are limited to a simple list of personality traits or speculative hypotheses that hamper the learning process regarding the topic [20,21]. To date, the Narcissistic Personality Inventory (NPI [22,23]) is one of the most well-constructed instruments for assessing narcissism from a dimensional perspective, even in nonclinical populations. However, it faces heavy criticism for not measuring the Narcissistic Personality Disorder scale and for risking false positives among healthy or high-functioning individuals, particularly those with high but non-pathological self-esteem [24]. Given the critical and questionable psychometric properties of Raskin and Terry's seven factors, Foster, et al. [25] created the Narcissism Grandiosity Scale (NGS), providing a more focused and psychometrically rigorous index of these seven factors [26]. Other tests have since been developed [27-29] to measure narcissism and its more specific components, such as grandiosity, exploitation, and entitlement, including the Pathological Narcissism Inventory (PNI), the Interpersonal Exploitativeness Scale (IES), the Narcissism Inventory 90 (NI-90), and the Psychological Entitlement Scale (PES), although they do not directly measure narcissism itself but rather its characteristics or subcategories, such as Entitlement. Other instruments are employed for the clinical diagnosis of the disorder, nearly all based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-V-TR [30]), but none of these psychometric tools address the fundamental role of the efficiency of the psychic instance of the ego concerning both functional and dysfunctional selfhood. As a result, the outcomes of these questionnaires may yield false positives due to high non-pathological self-esteem [24]. The construct of self-esteem is related to egoism in that the former relates to self-love while the latter pertains to self-centeredness; however, current psychometric instruments often struggle to distinguish between these two constructs during questionnaire development. This difficulty arises from their emphasis on a binary (true/false, yes/no) or tertiary (never/sometimes/always) response matrix, neglecting potential interpretive nuances [31-33]. Based on this critique, the present research work focuses precisely on addressing this need.

Aim

A validation study was conducted to determine whether the proposed psychometric instrument (Perrotta Ego Hypertrophy Investigation Questionnaire, PEHI-Q) can be reliable and valid for investigating the efficiency of the ego psychic instance regarding the hypotheses of hegonic hypertrophy (infantilism, egocentrism, and narcissism). Therefore, the purpose of the present discussion is to try to determine whether, in the current state of scientific knowledge, it is possible to validate the proposed psychometric instrument about the specific topic, according to the theory and model contained in the present study.

Materials and methods

Study design

Development, regulation, and validation of a psychometric instrument able to investigate the effectiveness of the psychic instance about the hypotheses of hegonic hypertrophy, based on the PEHI-Q, through administering a population sample to test its reliability and validity.

Materials and methods

PEHI-Q represents, in the international literature, the first modern questionnaire capable of studying the efficiency of the ego psychic instance, to investigate the egoism construct. The Perrotta Ego Hypertrophy Investigation Theory (PEHI-T) assumes as correct, in the absence of literature data to the contrary, the existence of the ego psychic instance according to the Freudian model outlined in the introduction, and that its dysfunction results in disequilibrium of the psychic scaffold:

Citation: Perrotta G, Eleuteri S. "Perrotta Ego Hypertrophy Investigation Questionnaire (PEHI-Q)": Development, Regulation, and Validation of a Psychometric Tool to Investigate the Clinical Aspects of Ego Hypertrophy. Open J Trauma. 2025;9(1):017-026. Available from: https://dx.doi.org/10.17352/ojt.000049

indeed, Ego hypotrophy involves a neurotic excess that facilitates Super-Ego hypertrophy and thus the subject will be markedly anxious, obsessive, phobic, avoidant or somatic; Ego hypertrophy, on the other hand, involves a dramatic excess that facilitates Super-Ego hypotrophy and thus the subject will be markedly bipolar, borderline, histrionic, antisocial, narcissistic or psychopathic. This theory focuses exclusively on the efficiency aspects of the instance, and thus only the normality-hypertrophy domain. Precisely because of this choice, the theory under consideration is developed into a corresponding model (Perrotta Ego Hypertrophy Investigation Model, PEHI-M) that attends only to the hypotheses of normality and hegonic hypertrophy, specifically identifying individual Spheres (or characteristics) of ego functioning about hegonic excess (Table 1). In a second research paper, the aspect of instance inefficiency (Perrotta Ego Hypotrophy Investigation Theory, PEhI-T), and then only the normality-hypotrophy domain (Perrotta Ego Hypotrophy Investigation Model, PEhI-M) will also be attended to.

Based on the proposed theory and model, the corresponding questionnaire, PEHI-Q [Supplementary 1], was developed, which is structured in 2 sections: the first (A) is devoted to the patient's history and biographical data, in 5 items; the second (B) is devoted to the clinical investigation, in 15 items with responses according to a scoring scale based on 5 hypotheses in ascending order (referring to the hypotheses of absence of hypertrophy, functional or healthy selfishness, infantilism, egocentrism and narcissism), for a total minimum of 0 points and a maximum of 60 points. The administration and scoring rules are organized as follows: a) the questionnaire is not self-administered and should be used after at least 1 cycle of 5 meetings in psychotherapy with the patient, in order to get a preliminary knowledge of his or her personality structure, in accordance with the use of psychometric personality diagnostic instruments; b) for each question in the questionnaire, the patient must choose 1 from the possible answers proposed; c) the patient must answer all the questions in the questionnaire; d) the questions in Section A are informative, while those in Section B are clinical; e) Section B is structured by groups of questions, each 3 and in progressive order, based on the 5 spheres of ego functioning (Ego-power: 1-3; Ego-stability: 4-6; Ego-intensity: 7-9; Ego-effectiveness: 10-12; Ego-adaptation: 13-15), and each item relates to an area of investigation, in progressive order; f) the sum of the scores by individual functioning group determines the specific interpretation, both of the individual spheres (power, stability, intensity, efficacy and adaptation) and of the total (Ego-efficiency score), because of a structural diagnosis, and summing the identical scores (absence of hypertrophy: 0; functional or healthy selfishness: 1; insane egoism type infantilism: 2; insane egoism type egocentrism: 3; insane egoism type narcissism: 4) on account of a functional/ dysfunctional diagnosis. The assessment made by the questionnaire of the structural and functional elements determine, in scoring, the designation of the typing of the specific narcissistic spectrum (Tables 2,3).

The methodology used consists of 2 consecutive operations: the first is related to the clinical interview, based on narrative, anamnestic and documentary evidence, with an interview concerning the emotional and perceptual-reactive experience of the patient; the second is related to the administration in the first instance of the PEHI-Q and the NPI, and in the second instance, at a distance of 2 months, only of the PEHI-Q, to allow all the analyses of the data statistics, for the validation of the new psychometric test. SPSS software, version 28, with descriptive and frequency analysis and correlations between selected variables was used to carry out the statistical procedures. The stages of the research were divided into 5 moments, relating to the selection of the population sample, according to the parameters indicated in the next paragraph, the clinical interview with the population group, again as indicated in the next paragraph, the administration of psychometric tests, in the first and second temporal instances, the processing of data after administration, and the comparison of the data obtained. For drafting the introduction, the author searched PubMed, from January 1966 to June 2024, for systematic reviews, meta-analyses, clinical trials and randomized controlled trials, using "narcissism", selecting 355 eligibility results. To have a greater and complete overview of the topic, ultimately selecting a total of 27 studies, still adding 6 more books to be able to argue the elaborated content (to more easily contextualize definitions and clinical-diagnostic profiles), for an overall total of 33 results. Simple reviews, opinion contributions, or publications

Table 1: Perrotta Ego Hypertrophy Investigation Model (PEHI-M).

Spheres (or characteristics) of Ego functioning	Areas of investigation	Description
Ego - Power	Rigidity of thought Arrogance-Presumption Need for control	It is the sphere of ego functioning related to its ability to choose its own goals to be achieved, according to specific purposes
Ego - Stability	Criticism-Judgments Fixations Infidelity	It is the sphere of ego functioning related to its ability to organize functional means to achieve its goals
Ego - Intensity	Empathy Grandiosity-Success-Amiration Victimhood-Lamentations	It is the ego's sphere of functioning related to its ability to realize its set goals, in a functional manner
Ego - Effectiveness	Paranoia-Suspiciousness Perfectionism Irresponsibility	It is the sphere of functioning of the ego related to its ability to maintain the results and benefits obtained over time, with the least possible effort
Ego - Adaptation	Manipulation Attention seeking-Body use Rules-Authority	It is the sphere of ego functioning related to its ability to adapt to external circumstances and other subjects

Citation: Perrotta G, Eleuteri S. "Perrotta Ego Hypertrophy Investigation Questionnaire (PEHI-Q)": Development, Regulation, and Validation of a Psychometric Tool to Investigate the Clinical Aspects of Ego Hypertrophy. Open J Trauma. 2025;9(1):017-026. Available from: https://dx.doi.org/10.17352/ojt.000049

Table 2: PEHI-Q scoring rules (Section B).

STRUCTURAL DIAGNOSTIC INTERPRETATION				
Spheres of Ego functioning	**Areas of investigation**	**Item-relative**	**Minimum -to-maximum score**	**Interpretation**
Ego - Power	Rigidity of thought Arrogance-Presumption-Megalomaniacal Need for control	#1 #2 #3	3-12	3-7: Power 8-12: Powerlessness
Ego - Stability	Criticism-Judgments Fixations Infidelity	#4 #5 #6	3-12	3-7: Stability 8-12: Instability
Ego - Intensity	Empathy Grandiosity-Success-Admiration Victimhood-Lamentations	#7 #8 #9	3-12	3-7: Strength 8-12: Weakness
Ego - Effectiveness	Paranoia-Suspiciousness Perfectionism-Vanity Irresponsibility	#10 #11 #12	3-12	3-7: Effectiveness 8-12: Ineffectiveness
Ego - Adaptation	Manipulation Attention seeking-Body use Rules-Authority	#13 #14 #15	3-12	3-7: Adaptation 8-12: Maladaptation
TOTAL		15	15-60	15-37: Efficiency 38-60: Inefficiency

FUNCTIONAL DIAGNOSTIC INTERPRETATION			
Functional diagnosis	**Item-relative**	**Summation of total scores**	**Interpretation**
Absence of hypertrophy	All items selected with the score "0"	0	No hypertrophy
Healthy selfishness	All items selected with the score "1"	1-15	Sane Selfishness
Insane selfishness	All items selected with the score "2"	16-30	Infantilism
	All items selected with the score "3"	31-45	Egocentrism
	All items selected with the score "4"	46-60	Narcissism

Table 3: Narcissistic spectrum typifications identified by the PEHI-Q.

NARCISSISTIC SPECTRUM TYPIFICATIONS	
Typing	**Description**
No hypertrophy	The person does not present attitudes and/or behaviors typical of the narcissistic spectrum, with respect to age and social context of reference, consisting of infantile, selfish, egocentric and/or egotoxic modes (understood as pure narcissism). The complex spheres of his existence (personal, family, social, work) are intact and the subject presents a fair quality of life, again in relation to the narcissistic theme. The score corresponding to the PEHI-Q is 0/60.
Sane selfishness	The person presents minimal attitudes and/or behaviors typical of the narcissistic spectrum, with respect to age and social context of reference, consisting of mostly childish and/or selfish modes; however, the complex spheres of his/her existence (personal, family, social, work) are mostly intact and the person presents a sufficient quality of life, again in relation to the narcissistic theme. The score corresponding to PEHI-Q is not less than 1/60 and not more than 15/60.
Infantilism (or type I)	The person exhibits childish attitudes and behaviors, relative to age and context, consisting of poor intellectual and emotional maturity. This condition involves one or more complex spheres of his or her existence (personal, family, social, work), leading to a deterioration in the quality of life. The score corresponding to PEHI-Q is not less than 16/60 and not more than 30/60.
Selfishness (or type II)	The person exhibits selfish attitudes and behaviors, in comparison with social expectation, age and reference context, consisting of over-characterization of his own needs compared to those of the people around him. This condition involves one or more complex spheres of his existence (personal, family, social, work), leading to a worsening of the quality of life. The score corresponding to PEHI-Q is not less than 31/60 and not more than 40/60.
Egocentrism (or type III)	The subject exhibits egocentric attitudes and behaviors, with respect to social expectation, age and context of reference, consisting of over-characterization of his own needs with respect to those of the people around him, to their detriment (with respect to selfishness that is realized without the need to take advantage of others' subjective positions). This condition involves one or more complex spheres of his existence (personal, family, social, work), leading to a worsening of the quality of life. The score corresponding to PEHI-Q is not less than 41/60 and not more than 50/60
Narcissism- Overt (or type IV)	The subject has had a clinically relevant condition for more than 6 months and he presents egocentric attitudes and behaviors, with respect to social expectation, age and context of reference, consisting of the use of active manipulation, the need to establish superficial and fun-ctional ties to obtain personal goals, to the detriment of others, need for admiration and power, high self-esteem often unmotivated, arrogance and sense of superiority. This condition involves one or more complex spheres of his or her existence (personal, family, social, work), leading to a deterioration in the quality of life. The score corresponding to PEHI-Q is not less than 51/60 and not more than 60/60, but interpretation of overt subtyping depends on clinical assessment at interview.
Narcissism-Covert (or type V)	The subject has had a clinically relevant condition for more than 6 months and he presents egocentric attitudes and behaviors, with respect to social expectation, age and context of reference, consisting of the use of passive-aggressive manipulation, the need to establish bonds of control and dependence, even fictitious ones, need for attention and reassurance, low self-esteem often unmoti-vated or feigned only to attract attention, use of grievance and guilt to obtain one's own advantages. This condition involves one or more complex spheres of his or her existence (personal, family, social, work), leading to a worsening quality of life. The score corresponding to PEHI-Q is not less than 51/60 and not more than 60/60, but interpretation of covert subtyping depends on clinical assessment at interview.
Narcissism- Mixed (or type VI)	The subject presents egocentric attitudes and behaviors, with respect to social expectation, age and reference context, consisting of both overt and covert narcissistic modes, without a specific predominance or exclusively related to situational overactivations. This condition involves one or more complex spheres of his or her existence (personal, family, social, work), leading to a worsening quality of life. It is a general typing with subsidiary character, based on the clinical assessment in the interview and not on the basis of the questionnaire that exclusively weighs narcissistic factors diagnostically; in the interview, the therapist will assess the subjective weight of the overt/covert subtypes by designating the specific diagnosis (type IV/V) or in mixed form (type VI).

Citation: Perrotta G, Eleuteri S. "Perrotta Ego Hypertrophy Investigation Questionnaire (PEHI-Q)": Development, Regulation, and Validation of a Psychometric Tool to Investigate the Clinical Aspects of Ego Hypertrophy. Open J Trauma. 2025;9(1):017-026. Available from: https://dx.doi.org/10.17352/ojt.000049

in popular volumes were excluded because they were not relevant or redundant for this work. The search was not limited to English-language papers (Figure 1).

Setting and participants

A clinical group with specific characteristics was selected. A control group with equal characteristics was selected, in the absence of diagnosis and clinical features of narcissistic disorder. Inclusion criteria for the selection of the clinical sample are: 1) age between 16 years and 70 years; 2) Italian nationality; 3) diagnosis of narcissistic personality disorder, by physician referral practicing in a National Health System facility or private contracted facility. Exclusion criteria for the selection of the population are 1) age ≤ 15 years and ≥ 71 years; 2) foreign nationality; and 3) absence of diagnosis confirmed by specialist medical report. The chosen setting is the online platform via Skype, Zoom, Google Meet and WhatsApp Video Calls, both for clinical interviews and administration. During the clinical interview, the PICI-3-TA was administered exclusively for subscales #13 and #14 related to narcissistic overt and covert traits, for direct comparison with the diagnoses reported by the produced records. The selected clinical population group was 144 participants (clinical patients), ambisexual, and aged 16-70 years (M: 40.2, SD: 16.4). The drop-out rate was 0/144 (0%). The same characteristics are present in the control group (Table 4).

Results

Descriptive statistics

Preamble: The clinical population sample, selected according to the inclusion and exclusion criteria, was subjected to the administration of the PICI-3-TA during the first clinical interview, to verify the congruence of the diagnostic data in the medical records, and of the PEHI-Q and NPI for statistical validation checks; finally, the re-administration of the PEHI-Q was repeated in the last interview for statistical reliability checks of the new psychometric instrument.

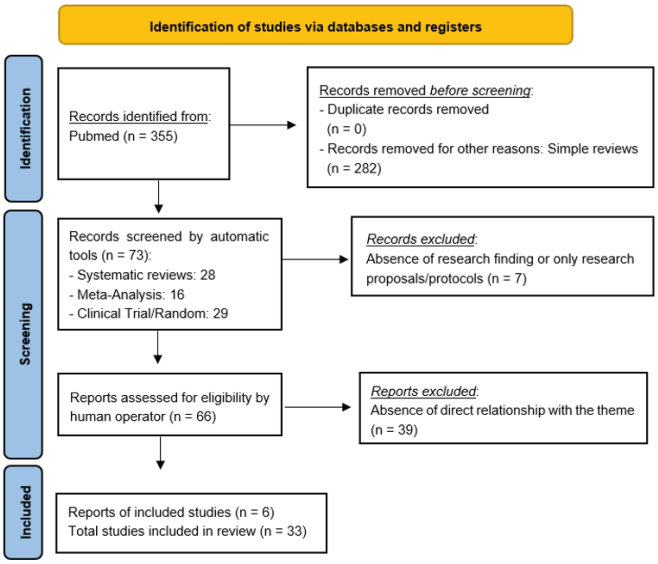

Figure 1: PRISMA flow diagram template. Matthew J Page et al. BMJ 2021; 372:BMJ.N71.

Table 4: *Clinical population group (numerousness).*

Age	Male	Female	Total
16-26	19 (35.2%)	19 (21.1%)	38 (26.4%)
27-37	13 (24.1%)	15 (16.7%)	28 (19.4%)
38-48	11 (20.4%)	18 (20.0%)	29 (20.1%)
49-59	4 (7.4%)	20 (22.2%)	24 (16.7%)
60-70	7 (12.9%)	18 (20.0%)	25 (17.4%)
Total	54 (37.5%)	90 (62.5%)	144 (100%)

Gender, age, and sexual orientation of the diagnosis of narcissism present in the clinical records: Sexual gender, concerning the population sample, is not an evaluable variable about diagnosis because the selection of the entire sample is pathological, and therefore both male gender (54/144, 37.5%) and female gender (90/144, 62.5%) have 100% pathological representation. Age and sexual orientation are also not assessable about diagnosis, for the same reason, although it is possible to identify as heterosexual in the male sample 26/54 patients (48.1%), and the female sample 45/90 (50.0%), showing that in the selected sample the variable of sexual orientation does not have specific majorities.

Clinical documentation and PICI-3-TA: The score obtained in the narcissistic scales of the PICI-3-TA greatly decreased the overall number of patients, reducing it from 144 to 65 (-55%), underscoring how the diagnosis present in the clinical record is strongly conditioned by the therapist's interpretative factors. It is not known in the report what psychometric instruments were used for diagnosis, except in 12/144 cases (8.3%), and therefore doubts of legitimacy cannot be raised; however, the emerging finding is alarming, as from the patients' narrative, in 59/144 cases (41%) they do not recall signing diagnostic forms or questionnaires, and therefore it is inferred that the diagnosis was made on an interpretive basis through diagnostic criteria during the clinical interview. Specifically, regarding the 79 cases that would not have been diagnosed by the PICI as a narcissistic disorder, it is inferred that 27 are in the male sample (50%) while 52 are in the female sample (58%), both with varying ages and evenly distributed. The diagnosis of PICI is structured based on DSM-V-TR criteria, taking into account the clinical description in the literature.

Clinical documentation and NPI: The score obtained in the narcissistic scales of the NPI greatly decreased the overall number of patients, reducing it from 144 to 116 (- 19%), underscoring how the diagnosis present in the clinical record is strongly conditioned by the therapist's interpretative factors or certain clinical conditions have changed from the issuance of the medical report to the participation of the present study. Specifically, about the 28 cases that the NPI would not have diagnosed as a narcissistic disorder, it is inferred that 7 are in the male sample (13%) while 21 are in the female sample (23%), thus with a clear majority on the female group and with significantly more variability on the adult and mature age groups.

Clinical documentation and PEHI-Q (in first administration): The score obtained in the dysfunctional

Citation: Perrotta G, Eleuteri S. "Perrotta Ego Hypertrophy Investigation Questionnaire (PEHI-Q)": Development, Regulation, and Validation of a Psychometric Tool to Investigate the Clinical Aspects of Ego Hypertrophy. Open J Trauma. 2025;9(1):017-026. Available from: https://dx.doi.org/10.17352/ojt.000049

scales of the PEHI-Q (scoring equal to or greater than 30/60) demonstrates a more precise identification and distinction of the narcissistic form than the forms of infantilism and egocentrism. In fact, about the 144 cases (clinical group), the PEHI-Q defines all 144 cases as pathological, as correctly framed in the clinical documentation, but distinguishes narcissistic cases from all other cases, which appear to be milder forms, as shown in Table 5.

Taking into account only the cases of narcissism (48/144, 33.3%), for the PEHI-Q, we find that 19 are in the male sample (39.6%) and 29 in the female sample (60.4%), with a clear majority in the male group for the younger age groups, while in the female group with evenly distributed variability for all age groups.

For the control group, statistical analysis confirmed that the entirety of the selected group did not present at the clinical interview and on the questionnaires administered any index of pathology.

Validation of the questionnaire (PEHI-Q)

Comparison of test structures (PEHI-Q / NPI): Structurally, the 2 psychometric instruments have both structural and functional differences, as shown in Table 6 below.

About the individual items of the 2 psychometric instruments compared, despite the different structures, there are commonalities, grouping the proposed questions as shown in Table 7.

Table 5: Clinical documentation and PEHI-Q in the first admin (for the clinical group).

PEHI-Q	Male		Female		Total
	Age-range	**No.**	**Age-range**	**No.**	
			16-26	6	
	16-26	6	27-37	2	
Infantilism	27-37	2	38-48	2	38 (26.4%)
	38-48	3	49-59	7	
	49-59	1	60-70	6	
	60-70	3			
	Age-range	**No.**	**Age-range**	**No.**	
	16-26	7	16-26	7	
	27-37	7	27-37	8	
Egocentrism	38-48	3	38-48	10	58 (40.3%)
	49-59	1	49-59	7	
	60-70	2	60-70	6	
	Age-range	**No.**	**Age-range**	**No.**	
	16-26	6	16-26	6	
	27-37	5	27-37	6	
Narcissism	38-48	4	38-48	5	48 (33.3%)
	49-59	2	49-59	6	
	60-70	2	60-70	6	
Total	54 (37.5%)		90 (62.5%)		**144** (100%)

Table 6: Structural and functional differences between the 2 questionnaires compared (PEHI-Q / NPI). Judgment of equality (colour): red (No), green (Yes).

N	Characteristic	PEHI-Q_ (Sec.B)	NPI	Judgment of equality
	Structural elements			
1	Number of items	15	40	X
2	Response style	5	2	X
3	Score_range	0-60	0-40	X
4	Areas of inquiry_n	15	7	X
5	Identification of forms of insane selfishness other than narcissism	Yes (2)	No	X
6	Self-administration of the questionnaire	No	Yes	X
	Functional elements			
7	Ego efficiency analysis	Yes	No	X
8	Diagnosis of Narcissistic Personality Disorder	No	No	✓

Table 7: Comparison of the items of the 2 questionnaires compared (PEHI-Q / NPI).

N	Topic area	N_item_ PEHI-Q	N_item_NPI
1	Rigidity of thought	1	*No match*
2	Arrogance-Presumption-Megalomaniacal	2	1+6+19+20+34+35
3	Need for control	3	*No match*
4	Criticism-Judgments	4	*No match*
5	Fixations	5	*No match*
6	Infidelity	6	*No match*
7	Empathy	7	21
8	Grandiosity-Success-Admiration	8	8+10+11+14+16+17+23+24+27 +30+38+39
9	Victimhood-Lamentations	9	*No match*
10	Paranoia-Suspiciousness	10	*No match*
11	Perfectionism-Vanity	11	15+19+29
12	Irresponsibility	12	9+25+37
13	Manipulation	13	4+22+26+31
14	Attention seeking-Body use	14	2+5+7+12+13+28+36
15	Rules-Authority	15	3+18+32+40

Coefficient of stability: A binary correlation analysis was conducted between the first administration of PEHI-Q and the second administration after 2 months to check the stability of the test, obtaining a Pearson coefficient (R) of 0.999, with $p = < 0.001$. Statistical analysis: ANOVA test for paired data (Figure 2)

Factorial analysis: An exploratory factor analysis was conducted on PEHI-Q, using the Maximum Verisimilitude method for individual items, and an oblique rotation (Promax). The results obtained showed the exact coincidence of the partial results, referring to the individual comparable elements. The correlation matrix with oblique rotation (Promax) is 0.781, with $p = < 0.001$.

Validity indexes: The criterion validity index (for efficiency and accuracy) of PEHI-Q, considering the comparison items, is 0.766, while the construct validity index is 0.918. The convergent validity between the two questionnaires administered cannot

Citation: Perrotta G, Eleuteri S. "Perrotta Ego Hypertrophy Investigation Questionnaire (PEHI-Q)": Development, Regulation, and Validation of a Psychometric Tool to Investigate the Clinical Aspects of Ego Hypertrophy. Open J Trauma. 2025;9(1):017-026. Available from: https://dx.doi.org/10.17352/ojt.000049

be evaluated precisely because of their different structure and function.

Correlations: If both functionally and structurally, the two questionnaires are not comparable, the only way remains to compare the variables, including the diagnostic results, and thus compare the outcomes in the values indicating "narcissism", as shown in Table 8.

Discussion

Premise

The analyzed data, about the selected clinical population sample, allowed the validation process of the proposed new psychometric instrument to be concluded according to the specific purposes. In particular, the following considerations emerged from the overall data obtained through clinical interviews and testistic administration.

The current diagnostic process

It is focused on identifying the psychopathological features of the disorder, according to clinical criteria, but does not take into account narcissistic nuances, which can guide the diagnosis precisely because certain behaviors may not necessarily be clinical signs of narcissistic disorder. The greatest risk is to label a patient as "narcissistic" when he or she may simply have a hypertrophied ego, as is the case with patients who exhibit egoistic traits, such as infantilism and egocentrism.

Clinical need

The clinical need to study the efficiency of the psychic instance of the ego is even more evident in all those sub-clinical forms that are not nosographically identified by diagnostic criteria, but present psychopathological traits capable of affecting cognitive and behavioral profiles, either in hypotrophic terms (as occurs in phobias and obsessions) or in hypertrophic terms (as occurs in infantilism and egocentrism).

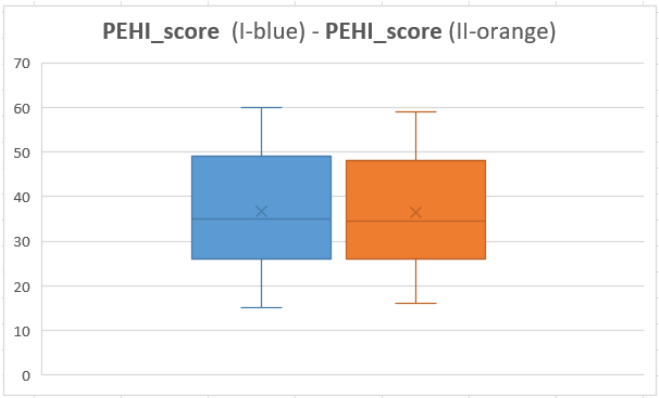

Figure 2: ANOVA test for paired data (PEHI_score_I / PEHI_ score_II).

Table 8: Comparison of PEHI-Q variables (Pearson's correlation). Values of $p < 0.05$.

N_dv	Dependent variable (dv)	Independent variable (iv)	Total sample (n =144)	
			R	p
		PICI-3-TA_Narcy-diagnosis	0.607	<0.001
1	PEHI-Q_total	NPI_total	0.238	0.004
		PICI-3-TA_Narcy-diagnosis	0.78	<0.001
2	PEHI-Q_narcisism	NPI_total	0.314	<0.001

Gradual scale

The substantial difference between the attenuated forms of egoism and the more extreme form of narcissism lies in the severity of the conduct about the negative consequences: an infantile subject acts out of his self-interest but without foreshadowing the negative consequences or seriously underestimating them, and therefore without taking responsibility for them; a self-centred subject acts for his advantage and is aware of the harm produced or the risk of causing someone to suffer but accepts that eventuality as less important than his personal need, avoiding giving importance to the consequences that are clear to him anyway; a narcissistic subject acts for his advantage, conscious of his act and aware that his needs come first, even if these cause discomfort and pain. It could be said, in legal terms, that the infantile acts out of conscious fault (it occurs when the subject foresees that his or her conduct may cause the harmful event, but acts equally with the belief and confidence that he or she can avoid it), the egocentric by malice aforethought (it occurs when the event is taken into account only as a contingency and the subject accepts the risk that the event will occur and acts even at the cost of causing it) and the narcissist by specific malice (with consciousness and will to bring about what is foreshadowed).

Statistical analysis of variables and distributions among samples

The variables "age" and "sexual gender", in the clinical group, are negatively correlated with each other ($R = -0.216$, $p = 0.009$), with a slight non-heterosexual bias in the male group (48.1% *vs.* 50.0%) of doubtful statistical value, as it might simply be determined by the internal variability of the selected sample and its numerosity. Also in the clinical sample, compared with the documentation produced (144/144), the tests administered showed that the clinical diagnosis of narcissism is markedly overstated: in particular, with the NPI the patients decreased by 19% (from 144 to 116), with the PICI-3-TA they decrease by 55% (from 144 to 65), and with the PEHI-Q they decrease by 67% (from 144 to 48), while redistributing the remaining 96 into the categories of infantilism (38/144, 26. 4%) and egocentrism (58/144, 40.3%), with an ever-increasing, directly proportional quantitative trend based on the questionnaire score. The statistical data related to the validation process of the PEHI-Q, despite the marked structural and functional differences with the NPI, confirmed the clinical utility ($R = 0.781$, $p = <0.001$), reliability ($R = 0.766$, $p = <0.001$) and stability ($R = 0.999$, $p = <0.001$) of the proposed new psychometric instrument, with solid construct validity (cv: 0.948), even in relation to the comparison test, which also in the literature would seem to suffer from low internal validity; in fact, when compared with the PEHI-Q it shows several shortcomings both structural (it examines only 7 out of 15 characteristics, focuses heavily on the themes of megalomania, grandiosity and attention-seeking while underestimating other themes such as rigidity of thought, empathy, victimhood, paranoia, and vulnerability to

Citation: Perrotta G, Eleuteri S. "Perrotta Ego Hypertrophy Investigation Questionnaire (PEHI-Q)": Development, Regulation, and Validation of a Psychometric Tool to Investigate the Clinical Aspects of Ego Hypertrophy. Open J Trauma. 2025;9(1):017-026. Available from: https://dx.doi.org/10.17352/ojt.000049

criticism and judgment) than functional (binary responses do not satisfy the range of argumentative hypotheses, the cut-off is median and serves only to define a narcissistic tendency, and does not take into account attenuated egoistic forms), which could seriously question its validity in clinical settings.

Limitations, implications for clinical practice, and prospects

The present study was carried out by including patients diagnosed with narcissistic personality disorder based on a referral from a medical professional in the national health system or a privately contracted facility, but a low percentage of the selected patients had complete clinical records; therefore, it was not possible to assess the criteria used to diagnose the disorder and which psychometric tests were administered to support the diagnosis. The medical reports were dated between 2 and 10 years from the start of this study, and therefore, it cannot be ruled out that those who underwent psychotherapy had significant clinical improvements capable of impacting the previous diagnosis confirmed in the report. For this reason, clinical interviews and administrations of the PICI-3-TA and NPI questionnaires were arranged, both to verify the current level of clinical severity and to make statistical validation comparisons. The numerosity of the selected clinical sample, despite being representative, could be a limitation to the results obtained, and therefore, a new study with a larger population sample is desired. The clinical implications of this validation are important prospectively, in that the therapist's use of the PEHI-Q facilitates his or her assessment in diagnostic terms, both for the study of the efficiency of the psychic ego instance, including regarding the functionality and dysfunction of defense mechanisms, and for the assessment of the patient in terms of his or her personality, with particular attention to narcissistic traits. PEHI-Q does not diagnose narcissism, as there is already PICI-3-TA that can do so, but it supports the therapist in complementary assessments to the diagnosis of narcissistic personality disorder. The choice not to allow self-administration of the questionnaire lies in the fact that narcissistic personality disorder is egosyntonic, so the patient could voluntarily or involuntarily distort the outcome and responses; however, this choice implies the therapist's necessary knowledge of the patient's personality profile.

Conclusion

The Perrotta Ego Hypertrophy Investigation Questionnaire (PEHI-Q) is a psychometric test with a well-defined and stable construct, with the variables clearly represented and positively associated with established constructs, to assess the efficiency of the psychic instance of the ego, in relation to hypertrophic hypotheses (e.g., infantilism, egocentrism, narcissism) or to implement assessment on the functioning or dysfunction of psychological ego defense mechanisms, to assess the degree of the patient's psychic impairment during psychotherapy, but also to monitor improvements following the therapies undertaken and to evaluate targeted interventions worthy of further clinical investigation.

Ethics approval and consent to participate

This study was waived for ethical review and approval because all participants were assured compliance with the ethical requirements of the Charter of Human Rights, the Declaration of Helsinki in its most recent version, the Oviedo Convention, the guidelines of the National Bioethics Committee, the standards of "Good Clinical Practice" (GCP) in the most recent version, the relevant national and international ethical codes, as well as the fundamental principles of state law and international laws according to the updated guidelines on observational studies and clinical trial studies. For patients under the age of 18 years, specific permission to participate was requested by stipulation of data processing and computer consent from both parents or legal guardians. Pursuant to Legislative Decree No. 52/2019 and Law No. 3/2018, this research does not require the prior opinion of an ethics committee, in implementation of Regulation (EU) No. 536/2014 and in accordance with Regulation (EU) 2017/745, the Declaration of Helsinki and the Oviedo Convention, since the scientific research contained in the manuscript: (a) does not concern new or already marketed drugs or medical devices; (b) does not involve the administration of a new or already marketed drug or medical device; (c) does not have commercial purposes; (d) is not sponsored or funded; (e) participants have signed the informed consent for participation and data processing, in compliance with applicable national and EU regulations; (f) refers to non-interventional and observational-comparative diagnostic topics; (g) the population sample was collected at a date prior to the start of this study and is part of a private and non-public database.

Consent for publication

Study participants, by signing informed consent and data processing, consented to the publication of data in anonymous and aggregate form. Subjects who gave regular informed consent agreements were recruited; moreover, these subjects requested and obtained from Giulio Perrotta, as the sole examiner and project manager, not to meet the other study collaborators, thus remaining completely anonymous. The authors, in compliance with applicable regulations, consent to the publication of the contents of this clinical study.

Availability of data and material

The subjects who participated in the study requested and obtained that Giulio Perrotta act as the sole examiner, and that co-authors be aware of the participant's data in an exclusively anonymous form. Authors make themselves available, by formal request to be evaluated on a case-by-case basis, to disclose research data and materials, in aggregate and anonymous form only, subject to applicable regulations and the informed consent and data processing signed by participants.

Authors' contributions

Giulio Perrotta is the creator and intellectual owner of the creation, editor of the manuscript and executor of the statistical analysis and validation. Stefano Eleuteri contributed to the review and publication process.

(Supplementary)

Citation: Perrotta G, Eleuteri S. "Perrotta Ego Hypertrophy Investigation Questionnaire (PEHI-Q)": Development, Regulation, and Validation of a Psychometric Tool to Investigate the Clinical Aspects of Ego Hypertrophy. Open J Trauma. 2025;9(1):017-026. Available from: https://dx.doi.org/10.17352/ojt.000049

References

1. Liu D, Zhu T, Huang X, Wang M, Huang M. Narcissism and Entrepreneurship: A Systematic Review and an Agenda for Future Research. Front Psychol. 2021;12:657681. Available from: https://doi.org/10.3389/fpsyg.2021.657681
2. Sheehan M. Moral narcissism and moral complicity in global health and humanitarian aid. J Med Ethics. 2018;44(5):287-288. Available from: https://doi.org/10.1136/medethics-2018-104887
3. Lemaitre B. Science, narcissism and the quest for visibility. FEBS J. 2017;284(6):875-882. Available from: https://doi.org/10.1111/febs.14032
4. Matosic D, Ntoumanis N, Boardley ID, Sedikides C, Stewart BD, Chatzisarantis N. Narcissism and coach interpersonal style: A self-determination theory perspective. Scand J Med Sci Sports. 2017;27(2):254-261. Available from: https://doi.org/10.1111/sms.12635
5. Tietzmann AC. Exposed patients: a reflection on confidentiality, narcissism and bioethics education. Rev Assoc Med Bras (1992). 2019;65(7):932-933. Available from: https://doi.org/10.1590/1806-9282.65.7.932
6. Casale S, Svicher A, Fioravanti G. Perfectionistic Self-Presentation and Psychopathology: A Systematic Review and Meta-Analysis. Clin Psychol Psychother. 2024;31(2):e2966. Available from: https://doi.org/10.1002/cpp.2966
7. Jauk E, Kanske P. Can neuroscience help to understand narcissism? A systematic review of an emerging field. Personal Neurosci. 2021;4:e3. Available from: https://doi.org/10.1017/pen.2021.1
8. Ellen BP, Alexander KC, Mackey JD, McAllister CP, Carson JE. Portrait of a workplace deviant: A clearer picture of the Big Five and Dark Triad as predictors of workplace deviance. J Appl Psychol. 2021;106(12):1950-1961. Available from: https://doi.org/10.1037/apl0000880
9. Perrotta G. "Perrotta Human Defense Mechanisms Questionnaire (PDM-Q-v2)": Development, regulation and validation of a psychometric instrument for the identification of the functioning of individual Ego defense mechanisms. Arch Depress Anxiety. 2023;9(2):072-078. Available from: http://dx.doi.org/10.17352/2455-5460.000084
10. Atkins DC, Yi J, Baucom DH, et al. Infidelity in couples seeking marital therapy. J Fam Psychol. 2005;19(3):470-3. Available from: https://doi.org/10.1037/0893-3200.19.3.470
11. Perrotta G, Marciano A. The clinical boundary between deviant behavior and criminal conduct: From maladaptive positions to pathological dysfunctionality using the "Graded Antisociality Model" (GA-M), the "Antisocial Severity Scale" (AS-S) and "Perrotta-Marciano questionnaire on the grade of awareness of one's deviant and criminal behaviors" (ADCB-Q). Ann Psychiatry Treatm. 2022;6(1):023-027. Available from: https://doi.org/10.17352/apt.000041
12. Fabiano G, Gentili S, Pillon P. La Psicoterapia Strategica nella pratica clinica. Primiceri Ed.; 2023.
13. Jung CG. L'uomo e i suoi simboli. Raffaello Cortina Ed.; 2020.
14. Perrotta G. Perrotta Integrative Clinical Interviews-3 (PICI-3): Development, regulation, updation, and validation of the psychometric instrument for the identification of functional and dysfunctional personality traits and diagnosis of psychopathological disorders, for children (8-10 years), preadolescents (11-13 years), adolescents (14-18 years), adults (19-69 years), and elders (70-90 years). Ibrain. 2024;10(2):146-163. Available from: https://doi.org/10.1002/ibra.12148
15. Perrotta G, Basiletti V, Eleuteri S. The "Human Emotions" and the new "Perrotta Human Emotions Model" (PHEM-2): Structural and functional updates to the first model. Open J Trauma. 2023;7(1):022-034. Available from: https://doi.org/10.17352/ojt.000043
16. Kelsey RM, Ornduff SR, McCann CM, et al. Psychophysiological characteristics of narcissism during active and passive coping. Psychophysiology. 2001;38(2):292-303. Available from: https://pubmed.ncbi.nlm.nih.gov/11347874/
17. Grikalva E, Zhang L. Narcissism and Self-Insight: A Review and Meta-Analysis of Narcissists' Self-Enhancement Tendencies. Pers Soc Psychol Bull. 2016;42(1):3-24. Available from: https://doi.org/10.1177/0146167215611636
18. Stucke TS, Sporer SL. When a grandiose self-image is threatened: narcissism and self-concept clarity as predictors of negative emotions and aggression following ego-threat. J Pers. 2002;70(4):509-32. Available from: https://doi.org/10.1111/1467-6494.05015
19. Baumeister RF. Self-concept, self-esteem, and identity. In: Derlega VJ, Winstead BA, Jones WH, editors. Personality: Contemporary theory and research. 2nd ed. Nelson-Hall Publishers; 1999. p. 339–375.
20. Perrotta G. Narcissism and psychopathological profiles: definitions, clinical contexts, neurobiological aspects and clinical treatments. J Clin Cases Rep. 2020;4(85):12-25. Available from: http://dx.doi.org/10.46619/joccr.2021.S5-1003
21. Finkel EJ, Campbell WK, Buffardi LE, et al. The metamorphosis of Narcissus: communal activation promotes relationship commitment among narcissists. Pers Soc Psychol Bull. 2009;35(10):1271-84. Available from: https://doi.org/10.1177/0146167209340904
22. Miller BK, Nicols KM, Clark S, et al. Meta-analysis of coefficient alpha for scores on the Narcissistic Personality Inventory. PLoS One. 2018;13(12):e0208331. Available from: https://doi.org/10.1371/journal.pone.0208331
23. Raskin R, Terry H. A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity. J Pers Soc Psychol. 1988;54(5):890-902. Available from: https://psycnet.apa.org/record/1988-25254-001
24. Ackerman RA, Donnellan EAWMB, Trzesniewski KH, et al. What does the narcissistic personality inventory really measure? Assessment. 2011;18(1):67-87. Available from: https://doi.org/10.1177/1073191110382845
25. Foster JD, McCain JL, Hibberts MF, Brunell AB. The Grandiose Narcissism Scale: A Global and Facet-Level Measure of Grandiose Narcissism. Pers Individ Dif. 2015;73:12-16. Available from: http://dx.doi.org/10.1016/j.paid.2014.08.042
26. Rosenthal SA, Montoya RM, Hooley JM, Jurgens CT. The Narcissistic Grandiosity Scale: A meta-analytic examination of item convergent and discriminant validity. Psychol Assess. 2022;34(9):891-897. Available from: https://doi.org/10.1037/pas0001151
27. Vater A. The Narcissistic Personality Inventory: A Useful Tool for Assessing Pathological Narcissism? Evidence From Patients With Narcissistic Personality Disorder. J Pers Assess. 2013;95(3):301-308. Available from: https://doi.org/10.1080/00223891.2012.732636
28. Miller JD, Price J, Campbell WK. Is the Narcissistic Personality Inventory Still Relevant? A Test of Independent Grandiosity and Entitlement Scales in the Assessment of Narcissism. APA Society for Clinical Psychology (D12, S9, Assessment). 2011;19(1). Available from: https://doi.org/10.1177/1073191111429390
29. Schoeneich F, Rose M, Danzer G, Thier P, Weber C, Klapp BF. Narcissism inventory-90 (NI-90). Empirically-based reduction and identification of items sensitive for change--a questionnaire particularly suited for measuring self-regulatory parameters. Psychother Psychosom Med Psychol. 2000;50(9-10):396-405. Available from: https://doi.org/10.1055/s-2000-9095
30. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR®). APA; 2022.

Citation: Perrotta G, Eleuteri S. "Perrotta Ego Hypertrophy Investigation Questionnaire (PEHI-Q)": Development, Regulation, and Validation of a Psychometric Tool to Investigate the Clinical Aspects of Ego Hypertrophy. Open J Trauma. 2025;9(1):017-026. Available from: https://dx.doi.org/10.17352/ojt.000049

31. Barkley RA. The executive functions and self-regulation: an evolutionary neuropsychological perspective. Neuropsychol Rev. 2001;11(1):1-29. Available from: https://doi.org/10.1023/a:1009085417776

32. Berman JZ, Small DA. Self-interest without selfishness: the hedonic benefit of imposed self-interest. Psychol Sci. 2012;23(10):1193-9. Available from: https://doi.org/10.1177/0956797612441222

33. Gross J, Vostroknutov A. Why do people follow social norms? Curr Opin Psychol. 2022;44:1-6. Available from: https://doi.org/10.1016/j.copsyc.2021.08.016

Citation: Perrotta G, Eleuteri S. "Perrotta Ego Hypertrophy Investigation Questionnaire (PEHI-Q)": Development, Regulation, and Validation of a Psychometric Tool to Investigate the Clinical Aspects of Ego Hypertrophy. Open J Trauma. 2025;9(1):017-026. Available from: https://dx.doi.org/10.17352/ojt.000049