Research Article

"Perrotta Affective Dependence Questionnaire (PAD-Q)": Development, regulation and validation of a psychometric instrument for the diagnosis of the affective dependence

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Abstract

Introduction: The construct of affective dependence is now considered a behavioural addiction, but the framework underlying the Perrotta Affective Dependence Model (PAD-M) considers it to be a manifested symptom of a specific psychopathological personality framework, and based on this theorization, the questionnaire (PAD-Q) was constructed to take into account the identification of 7 dysfunctional sub-styles related to the construct of affective dependence (neurotic, dependent, histrionic, masochist, borderline, covert narcissist and psychotic).

Methods: Using the PAD-M, the population was selected to validate a new psychometric test, then compared with the Love Addiction Screening Test (LAST).

Results: Statistical analysis showed that the psychometric test has a well-defined and stable construct (R = 0.999; *p* ≤ 0.001), with the variables well represented (R = 0.955; *p* ≤ 0.001) and positively correlated with another construct already validated (R = 0.961; *p* ≤ 0.001).

Conclusion: The Perrotta Affective Dependence Questionnaire (PAD-Q) is a valid, efficient, and effective psychometric tool to diagnose the clinically relevant condition of affective dependence to improve the structural and functional framing of the patient and the appropriate therapy to pursue.

Background

"Affectivity" is an aspect of psychic functions that define the spectrum of emotions (more primary, instinctive, immediate) and feelings (more reworked, reasoned, mediated by time and circumstances) positive and negative of man, in response to the environment in which he lives and the social relationships that surround him, characterized by a link between two or more individuals of intensity and/or intimacy. "Affections" meaning intense and intimate ties between two or more people who feel emotions and feelings, must, therefore, be distinguished from a) "passions", understood as persistent, impetuous, and intense moments that cause well-being and pleasure, if experienced and nurtured over time; b)"impulses", understood as fleeting, instinctive and intense moments, which provoke somatic (state of tension) and emotional (state of excitement) excitement, if experienced and nourished at the moment; c)"emotions", understood as psychic states consisting of the sudden and instinctive reaction of the organism to perceptions or representations that disturb the homeostatic balance; d) "feelings", understood as states of mind that re-elaborate, reason and mediate over time the impulses, passions, and emotions, feeding the affective system of an individual towards objects, people, or animals. Many human actions, therefore, erroneously attributed to the sphere of rationality, instead contain an affective determinant. Everything, event, and object have the affective colouring that manifests itself in the individual subject through states of mind variegated and grouped, schematically, within two opposite poles such for example, love-hate, and joy-sadness.

About their specific characteristics, such as intensity and duration, moods can be catalogued as emotions and feelings. Generally, when we indicate alterations in the emotional-affective tone we refer to a whole series of morbid conditions, which have a dysfunctional tone as a common basis and it is precisely in personality disorders that dysfunctional affectivity becomes a real addiction, often confused even by technicians and therapists (and wrongly treated in psychotherapies) as a new "behavioural addiction" (the so-called "love addiction"), according to one's perception of reality, until it evolves into the largest form: the "personality addiction disorder" [1].

Although affective addiction, due to the lack of experimental data, is not included among the mental disorders diagnosed in DSM-5 (the Diagnostic and Statistical Manual of Mental Disorders) as a disorder in its own right, it is present in the section of related disorders relative to "New Addictions", or new behavioral addictions, including Internet addiction, pathological gambling, sex addiction, sports addiction, compulsive shopping, and work addiction, and should be clearly distinguished from dependent personality disorder in that: a) in dependent personality disorder, the need for protection and caretaking prevails, in affective dependence this need is not only prevalent, but exaggerated; b) people with dependent personality disorder allow others to take over and manage areas of their lives, while in affective dependence this does not happen; c) in dependent personality disorder, the addictive figure is immediately replaced with another one or with a substance, while in affective dependence the patient "fixates" on the previous relationship and tries to recover it in every way; d) in dependent personality disorder, dependence on other people is constant, being a personality trait, while in affective dependence it develops only in certain relationships. Also by the theoretical assumptions of the Psychodynamic Diagnostic Manual (PDM), affective dependence is nowadays explained as a dysfunctional consequence of the evolutionary-social matrix, neurobiological (limbic system), and/or dysfunctional attachment style [2-6].

People who suffer from "emotional dependence" often feel inadequate and unworthy of love and constantly live in terror of being abandoned by their partner. The fear of abandonment leads to the attempt to control the other with complacent behavior of extreme sacrifice, availability, and care, in the hope of making the relationship stable and lasting. The very tendency to build a relationship of non-meaning, but in which the other and his needs are central, leads to leaving room for egocentric and anaffective personalities, which end up confirming in those who suffer from emotional dependence the fear of not being able to be worthy of love. Low self-esteem pushes the person who suffers from emotional dependence to read the scarce availability of the other not as information about the other ("he is an egocentric narcissus"), but as information about himself ("he does not love me because I am not good"). The result is an increase in sacrificial and continuous blame for the unsatisfactory performance of the relationship; the other is chased exactly as gamblers do who "chase the loss" and can't stop playing. Sometimes, because of a wrong done by the partner, anger can momentarily push the affective addict to stop and end the relationship, but inevitably, the symptoms of withdrawal (depression and inability to feel pleasure, anxiety, feeling of emptiness, etc.) push to forgive the partner and justify it, thus entering the vicious circle of a toxic relationship. Starting from the general concept of affectivity, it could be shown that affective dependence cannot be reduced to categorization in the list of behavioural addictions, even though it shares clinical and neurobiological aspects that could be misleading. In reality, the dependent manifestation is nothing more than a symptom that from time to time represents a specific element of various personality disorders, becoming the core of the dependent personality disorder. The analytic approach must, therefore, be multidimensional, precisely to better understand all aspects of affective dependence and how it colours the manifested disorder from time to time. From affective dependence to personality disorders, passing through the dynamics of human bonding, to the implications determined by attachment theory, in a framework of diagnostic transversality, to arrive at the best possible therapy, always integrated between psychopharmacology and psychotherapy [1].

Based on this assumption and on the definition of "affective dependence" (understood as a maladaptive model of the affective-sentimental relationship of a couple, which involves the establishment or persistence of a clinically significant bond, lasting at least six months and characterized by a functional impairment of the relational area, the emotional area and the somatic area) the Perrotta Affective Dependence Questionnaire (PAD-Q) was created [7], with the aim of identifying the clinical manifestation of affective dependence with a questionnaire that was capable of defining both the patient's degree of impairment (dysfunctional behaviors, dysfunctional attitude, dysfunctional predisposition, relevant clinical condition of moderate, significant, severe and very severe type) and the type/style of affective dependence (neurotic, dependent, histrionic, masochist, borderline, covert narcissist and psychotic), thus relying on the PICI model [8] with regard to the ideation of dependent styles. Two subsequent studies have demonstrated the reliability, efficiency, and effectiveness of the PAD-Q precisely concerning the objectives, structuring, and functioning of the above model [9,10], facilitating with its use during clinical diagnosis a better diagnostic framing of current affective-behavioural addictions, thus enabling a focus on the dysfunctional traits of patients and the correct psychodiagnostic framing and their possible clinical treatment. In particular, with the second study it was possible to state that the data emerging from the male population sample finally showed that only 12.5% - 20% have a clinically relevant diagnosis of "affective dependency" (these findings show that the toxicity of the affective-emotional-sentimental relationship is not attributed to a cause of affective dependence but rather to causes of another nature capable of interfering with the normal intimate relationship), while the female population reports a clinically relevant value in 100% of the cases analyzed; however, it should be emphasized that this dependence dynamic represents a symptom of a specific personality disorder and therefore the dependency pattern becomes in the emotional relationship a real nourishing cause

of the toxicity of the relationship, a sort of means to obtain a secondary benefit of nature dysfunctional -which feeds the psychopathology itself-, resistant even during psychotherapies [10].

Several psychometric instruments are used to assess affective dependency tendencies:

1. "*Inventory for interpersonal relationships and sentimental dependencies*" (IRIDS-100) [11,12]

2. "*Loving and Liking Scales*" (LLS) [13], consisting of 26 items divided into two scales of 13 items each, which can measure liking and romantic love.

3. "*Individual Capacity To Love*" (ICL) [14], consisting of 41 items, which can assess the ability to love, considering cognition in romantic relationships as a personality trait related to various elements of mental health, such as depression, pathological narcissism, and conflict.

4. "*Trait-Specific Dependence Inventory*" (TSDI) [15], consisting of 34 items, which can investigate six different factors related to affective dependence: a) tunable/engaged (9 items); b) resource accumulation potential (10 items); c) physical prowess (3 items); d) emotional stability (4 items); e) solicitation (5 items); f) physical attraction (3 items).

5. "*Infatuation and Attachment Scales*" (IAS) [16], consisting of 20 items, measures a two-dimensional construction of romantic love through two subscales (infatuation and attachment), with 10 items each.

6. "*Multidimensional Evaluation of Love Scale*" (MELS) [17], consisting of 21 items, measures the multidimensional aspects of love.

7. "*Love Addiction Measure*" (LAM) [18], consisting of 20 items, aimed at studying the symptomatic characteristics of affective dependence.

8. "*Interpersonal Dependency Inventory*" (IDI) [19], consisting of 48 items, and the shortened version [20] of only 6 items assess the characteristics of maladaptive addiction.

9. "*Emotional Dependence in Dating of Young People and Adolescents*" (EDDYA) [21], consisting of 12 items, investigates 4 factors related to affective dependence, for subjects younger than 18 years old.

10. "*Relationships and Sentimental Dependencies Inventory*" (RSDI) [22], consisting of 100 items, capable of measuring 3 types of sentimental dependence: "affective or emotional dependence", "co-dependence", and "two-dependence".

11. "*Passionate Love Scale*" (PLS) [23], composed of 30 items, to identify the boundary between passionate love and dependence, based on the nature of some of the components it measures, such as intrusive thoughts, worries about the partner, and negative feelings when things go wrong.

12. "*Love Addiction Screening Test*" (LAST) [24], by Aaron Alan, consists of 25 questions and is adapted on Mellody and Cames's test (40 Questions for Self-Diagnosis of Affective Dependence - ALAA's), to investigate the presence or absence of relevant conduct related to affective dependence.

To date, the constructs of affective dependence all refer primarily to the official nosography [25], deeming it essentially a behavioural addiction or otherwise related to mood-related psychopathological conditions [26-38].

Aim

A validation study was conducted to determine whether the proposed psychometric instrument (PAD-Q) is capable of being reliable, efficient, effective, and valid for the diagnosis of affective dependence, regardless of the patient's psychopathological condition, which may or may not warrant it. Therefore, the present discussion aims to try to determine whether, in the current state of scientific knowledge, it is possible to validate the proposed psychometric instrument concerning the condition of affective dependence, according to the meaning of the author's model of the present study [7].

Materials and methods

Study design

Development, regulation, and validation of a new psychometric instrument of affective dependence, that was based on the model of the Perrotta Affective Dependence Model (PAD-M) [1,7].

Materials and methods

Starting with the Perrotta Affective Dependence Model (PAD-M), which identifies affective dependence as "*a maladaptive model of the affective-sentimental relationship of a couple, which involves the establishment or persistence of a clinically significant bond, lasting at least six months and characterized by a functional impairment of the relational area, the emotional area and the somatic area*" [1,7] it was decided to design a questionnaire that would take into account 3 main features: 1) the wording of the items must describe a characteristic of affective dependence, according to the three areas of impairment (relational, emotional, and somatic) and not as a simple behavioral dependence, thus limiting the diagnostic investigation of the patient's structural and functional personality profile; 2) item responses must be calibrated on the basis of an L0-5 severity scale, in which the subject identifies his or her dysfunctional tendency in an interpretive range from "not at all" to "totally agree"; 3) items must be interpreted by dividing them by 7 sub-styles of dysfunction, identified in the model (neurotic, dependent, histrionic, masochist, borderline, covert narcissist and psychotic) [3], each with its precise characteristics. The interpretive grid was then designed based on the Perrotta Affective Dependence Model (PAD-M) (Table 1).

Table 1: *Perrotta Affective Dependence Model (PAD-M)* [1,2].

Type	Style	Description
I	*Affective neurotic*	Tendency to frequently use neurotic defence mechanisms for secondary benefits, preoccupation with having to meet partner's expectations, brooding and disturbing fantasies related to the relationship, catastrophic ideas, and pessimistic ideations
II	*Dependent*	Tendency to lose touch with one's own emotions by putting the partner's needs and expectations first, seeking approval and reassurance from the partner, generalized anxiety, unfounded fear that the partner may prefer another person, and the use of cognitive distortions and self-deception to justify one's behaviour
III	*Histrionic*	Tendency to fear stability in relationships (although he seems to seek it very intensely), theatricality in the manifestation of his emotions, dramatic and excessive reactions, seeking complex emotional situations or with complicated people, and use of complaints
IV	*Masochist*	Tendency to excessively tolerate and justify the partner's behaviour, even if the disrespectful or inappropriate, excessive focus in the relationship and toward the romantic relationship with related excessive emotional investment, putting one's rights and needs first and delegitimizing actions in favour of the partner
V	*Borderline*	Tendency to feel empty or bored, a compelling need for an emotional, sentimental, or sexual relationship even with people one has just met, fear of abandonment and loneliness, use of idealization/evaluation in the relationship
VI	*Covert narcissist*	Tendency to prefer complicated, troubled, or dramatic relationships even if they declare themselves unhappy, unfounded fear that their partner does not love them enough, need to win over people who initially show little interest or disinterest, passive-aggressive manipulation of the relationship, and difficulty maintaining distance and boundaries with their partner
VII	*Psychotic*	The tendency toward withdrawal and loneliness, a highly controlled emotionality, frequent masturbatory activity with limited intercourse as a couple, obsessions, paranoia, delusions, and an excessive focus on partner pleasure as a priority at the expense of one's own body and needs

The method used consists of two consecutive operations: the first is related to the clinical interview, based on narrative anamnestic and documentary evidence, with an interview regarding the emotional and perceptual-reactive experience of the patient; the second is related to the administration in the first instance of the Perrotta Affective Dependence Questionnaire (PAD-Q) and the Love Addiction Screening Test (LAST) [24] and in the second instance, after three months, again using the PAD-Q, to allow full statistical analysis for validation of the latter. The stages of the research were divided as follows: 1. Selection of the population sample, according to the parameters given in the next paragraph. 2. Clinical interview with each population group, as indicated in the next paragraph. 3. Administration of psychometrical tests. 4. Data processing after administration. 5. Comparison of the data obtained. Statistical analyses carried out on the data obtained relate to the study of the population, in terms of sample size and frequency, binary correlation analysis using Pearson's Coefficient, factorial analysis using the Maximum Verisimilitude method and an oblique rotation (Promax), and construct validity and convergence indices.

Setting and participants

Inclusive criteria for the selection of the population are 1) Age between 14 years and 79 years; 2) Italian nationality; 3) Absence of neurodegenerative disorders or severe genetic diseases capable of impairing cognitive functioning. Exclusive criteria for the selection of the population are 1) Age ≤ 13 years and ≥ 80 years; 2) foreign nationality; 3) Presence of neurodegenerative disorders or severe genetic diseases capable of impairing cognitive functioning. The chosen setting, tender standing during the protracted pandemic period (already in progress since the beginning of the present research), is the online platform via Skype and WhatsApp Video Calls, both for clinical interviews and administration. The present research work was carried out from June 2021 to June 2023. All participants were guaranteed anonymity after confirming in writing their consent to the study and the processing of

personal data, and all ethical requirements of the Declaration of Helsinki were met. Because the research is not funded by anyone, it is free of conflicts of interest. The sample of the selected population is 632 participants (156/m; 476/f) to the entire study. The drop-out rate was 0/632 (0%) (Table 2).

Results

Development and regulation of the questionnaire (PAD-Q)

The Perrotta Affective Dependence Questionnaire (PAD-Q) measures a patient's degree of clinical impairment concerning his or her previously presumed or ascertained condition of affective dependence during developmental age, from early adolescence (14 years) to adulthood (79 years). Thus, it is proposed to study the phenomenon of "affective dependence", defined as a maladaptive pattern of the affective-sentimental relationship of a couple that involves the establishment or persistence of a clinically significant bond, persisting for at least six months and characterized by a functional impairment of the relational, emotional and somatic areas. Specifically, the passive subject of the relationship, suffering from emotional dependence, experiences the following symptomatological picture: 1) "relational area": relational dependence/codependence, assumption of others' responsibility with significant delegation, excessive justification of the partner's hurtful, abusive or disparaging conduct, psychophysical submission dynamics or subordinate relationship, excessive need for reassurance, attention or relational certainty, unmotivated fear of abandonment; 2) "somatic area": Emotional, relational, affective, sentimental and physical malaise, excessive tolerance concerning the partner's hurtful, abusive or denigrating episodes, masochistic dynamics; 3) "emotional area": inability to manage anxiety, low frustration tolerance, emotional instability, need for control, unmotivated fears, low self-esteem, verbal and/or physical denigration, obsessive and/or delusional episodes. Thus, affective addiction, not being a well-identified psychopathological label in the

international nosographic framework, except in the general framework of behavioural addictions, is identified in this context as a behavioural maladaptive pattern describing a series of personality traits afferent to several nosographically recognized psychopathological disorders. It consists of 35 items with L0-5 response (0 to 5 points, per item), in which the subject identifies his or her dysfunctional tendency in an interpretive range from "not at all" to "totally agree" (Table 3).

Court study

The cohort study of the selected population sample shows that the female component accounts for more than 2/3 of the total sample, with a greater preponderance in the 14-46 age group, with an increasing trend, and then decreasing in the 47-79 age group; in particular, taking the ≥ 96/175 PAD-Q value as the psychopathological reference, it emerges that 73/632 (11.6%) of the total selected population turn out to have values considered clinically relevant, distributed as follows among the respective age groups (Table 4) and the average scores obtained by age group (Table 5):

The first increasing (14-46) and then decreasing (47-79) trend of pathological scores obtained at the PAD-Q is thus confirmed, confirming what has been stated so far.

Table 2: *Population sample (numerousness).*

Age	Male	Female	Total
14-24	30	94	124 (19.6%)
25-35	52	134	186 (29.4%)
36-46	34	118	152 (24.1%)
47-57	26	82	108 (17.1%)
58-68	12	40	52 (8.2%)
69-79	2	8	10 (1.6%)
Total	156 (24.7%)	476 (75.3%)	632 (100%)

Validation of the questionnaire (PAD-Q)

Comparison of test structures

Introduction: Structurally, the PAD-Q consists of 35 items, divided into 7 pathological sub-styles (5 items dedicated to each sub-style), with an intermediate score of 0-25 points per sub-style and an overall final score of 0-175 points, with clinically relevant values from 96 points (i.e., positivity at 54. 9% of the test), while the LAST consists of 25 items, with individual item scores of 0-1 points (no-yes), for an overall total of 0-25 points and clinically relevant values from 7 points (i.e., positivity at 28.0% of the test). Functionally, the PAD-Q identifies 7 pathological sub-styles to define both the overall level of affective dependence and the individual styles that then define the patient's dependent behaviour, whereas the LAST simply defines whether the subject exhibits behaviours that can be considered pathological from the standpoint of effective dependence and thus suggest possible therapeutic intervention. Thus, comparing the final scores, as the intermediate scores are not comparable due to obvious structural and functional differences, considering the cut-off (96/175) of the PAD-Q, it emerges that both tests are efficient and effective, based on their basic model, both in the comparison of the scoring scales (Table 1) and in the comparison of the final score equalized by model (Table 2), although the cut-off (7/25) of the LAST is considered by the PAD-Q as a dysfunctional attitude (53/175); in fact, for the PAD-Q the values that can already be considered relevant for a possible psychotherapy setting (and not necessarily intended as clinically relevant values because they are psychopathological) are precisely related to dysfunctional attitude (≥ 51/175) Figures 1,2.

Coefficient of stability: A binary correlation analysis was conducted between the first administration of the Perrotta Affective Dependence Questionnaire (PAD-Q) and the second

Table 3: *PAD-Q scoring (total score).*

Score ranges	Diagnosis	Interpretation
0-35	*Absence of pathological signs*	The patient shows no clinically relevant symptoms related to the condition of emotional dependence
36-50	*Dysfunctional behavior*	The patient shows clinically relevant mild symptoms related to the condition of affective dependence, learned during relational experiences
51-65	*Dysfunctional attitude*	The patient shows sufficiently clinically relevant symptoms related to the condition of affective dependence, learned and reinforced during relational experiences
66-80	*Dysfunctional inclination*	The patient shows sufficiently clinically relevant symptoms related to the condition of affective dependence, learned and reinforced during relational experiences related to personal and family events
81-95	*Dysfunctional predisposition*	The patient exhibits sufficiently clinically relevant symptoms related to the condition of emotional dependence, learned and reinforced during relational experiences related to personal and family events, and which have become an integral part of the process of shaping his or her personality
96-115	*Moderate-level clinically relevant condition*	The patient exhibits clinically relevant symptoms related to the condition of affective dependence, learned and reinforced during relational experiences related to personal and family events, and which have become an integral part of the process of forming his or her own moderately dysfunctional personality concerning specific pathological structures
116-135	*Significative-level clinically relevant condition*	The patient exhibits clinically relevant symptoms related to the condition of emotional dependence, learned and reinforced during relational experiences related to personal and family events, and which have become an integral part of the process of forming his or her personality, markedly dysfunctional, concerning specific pathological structures
136-155	*Severe-level clinically relevant condition*	The patient exhibits clinically relevant symptoms related to the condition of emotional dependence, learned and reinforced during relational experiences related to personal and family events, and which have become an integral part of the process of forming his own severely dysfunctional personality concerning specific pathological structures
156-175	*Very severe-level clinically relevant condition*	The patient exhibits clinically relevant symptoms related to the condition of emotional dependence, learned and reinforced during relational experiences related to personal and family events, and which have become an integral part of the process of forming his or her own, severely dysfunctional personality concerning specific pathological structures

Table 4: *% subjects with affective dependence concerning the total population sample.*

Age	Male	Female	Total
14-24	5 (27.6%)	23 (41.8%)	28 (38.4%)
25-35	9 (50.0%)	21 (38.2%)	30 (41.2%)
36-46	1 (5.6%)	5 (9.1%)	6 (8.2%)
47-57	1 (5.6%)	4 (7.3%)	5 (6.8%)
58-68	1 (5.6%)	1 (1.8%)	2 (2.7%)
69-79	1 (5.6%)	1 (1.8%)	2 (2.7%)
Total	18 (24.7%)	55 (75.3%)	73 (100%)

Table 5: *Average scores on the PAD-Q by age group.*

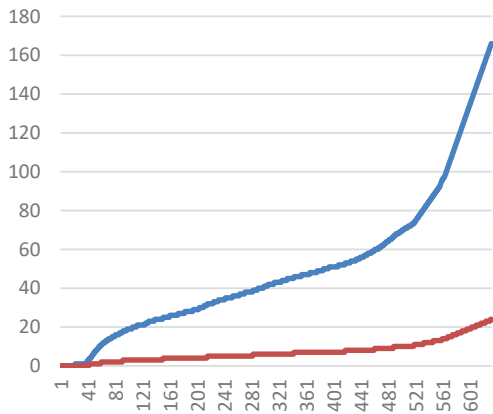| Age	Male	Female	Total
14-24	117.2	116.4	116.8
25-35	139.4	142	140.7
36-46	164	153.4	158.7
47-57	98.5	98.8	98.7
58-68	102	104	103
69-79	90	96	93

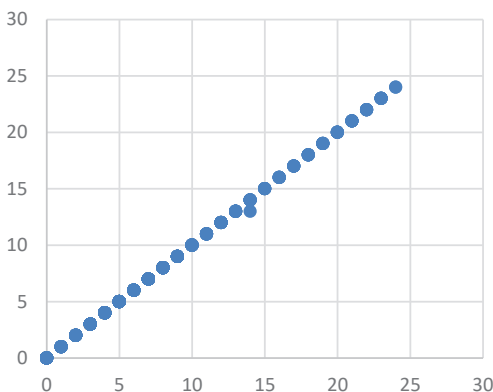**Figure 1:** Comparison of the scores of the 2 psychometric tests (PAD-Q/LAST): Comparison of the scoring scales.

Figure 2: Comparison of the scores of the 2 psychometric tests (PAD-Q/LAST): Comparison of the final score equalized by model.

administration, which occurred after 3 months, to check the stability of the test, obtaining a Pearson's coefficient (R) of 0.999, with $p ≤ 0.001$ (Table 6).

Factorial analysis: An exploratory factor analysis was conducted on the Perrotta Affective Dependence Questionnaire (PAD-Q), using the Maximum Verisimilitude method for individual items, and an oblique rotation (Promax). The results obtained showed the exact coincidence of the final results (PAD-Q: 0-175; LAST: 0-25), as individual items cannot be compared due to obvious structural and functional differences. The correlation matrix with oblique rotation (Promax) is 0.955, with $p ≤ 0.001$ (Table 7).

Validity indexes: The criterion validity index (for efficiency and accuracy), of the Perrotta Affective Dependence Questionnaire (PAD-Q) is 0.988, while the convergent validity between the PAD-Q and LAST is 0.961 and $p ≤ 0.001$ (Table 8).

Discussion

The Perrotta Affective Dependence Model (PAD-M) represents, in the international literary landscape, the first model capable of identifying 35 specific pathological tendencies related to the construct of affective dependence and identifying in them 7 specific psychopathological styles, capable of detailing the various dysfunctional inclinations based on an established nosography of personality disorders then crystallized and revised in the PICI model.

For these reasons, current psychometric instruments are unable to meet this new approach, as some tests are aimed exclusively at investigating certain limited related dimensions (LLS, IAS, and IDI), and other tests do not distinguish sharply between different personality tendencies but dwell on related characteristics or factors (TSDI and MELS), still others dwell on a diagnosis that pertains to the behavioural addiction construct (LAM and PLS) or finally refer only to a limited population (EDDYA). Only 2 psychometric tests could come close to the new construct of the PAD-Q, the "Individual Capacity To Love" (ICL) [13] which is capable of assessing the capacity to

Table 6: *Statistical analysis for the evaluation of the stability coefficient, expressed by the Pearson.*

	N_population	Mean (M)	Standard deviation (SD)
PAD-Q	632	49.7	36.5
PAD-Q_3months	632	49.6	36.5
	N_population	Correlation	Significance (p)
PAD-Q <-> PAD-Q_3months	632	0.999	0.000

Table 7: *Statistical analysis of the factors for evaluating comparisons between PAD-Q and LAST.*

	N_population	Mean (M)	Standard deviation (SD)
PAD-Q	632	49.7	36.5
LAST	632	7.1	5.2
	N_population	Correlation	Significance (p)
PAD-Q <-> LAST	632	0.955	0.000

Table 8: *Statistical analysis of the validity indices for evaluating comparisons between PAD-Q and LAST.*

	N_population	Criterion validity index	Convergent validity index
PAD-Q <-> LAST	632	0.988	0.961

love, considering cognition in sentimental relationships as a personality trait related to various elements of mental health, such as depression, pathological narcissism, and conflict, and the "Relationships and Sentimental Dependencies Inventory" (RSDI) [21], capable of measuring 3 types of sentimental dependence: "affective or emotional dependence", "co-dependence", and "two-dependence"; however, the former although anchored in psychiatric nosography tends to identify dysfunctional traits without making clear distinctions on the basis of specific personality profiles, while the latter has the merit of distinguishing between three different types of affective dependence, distinguishing the forms however not on the basis of symptomatology and personality picture but on the basis of the relational relationship with the other person, thus preventing the therapist from direct intervention on the patient's structure and functioning in psychotherapy, due to lack of clinical information (to be obtained anyway through clinical interviews).

The only test that by construct could be compared, for validation purposes, turns out to be the IRIDS-100 [11,12], although the results are quite different, in structure and function, starting with the failure to distinguish between dependence, codependence, and dual dependence in the PAD-Q (since interpersonal ties are already defined within each category identified by the model), and the failure to recognize dysfunctional personality categories in the IRIDS-100 (since the purpose is to define the dependence construct without necessarily relating it to a specific psychopathological picture). On the other hand, the test under review identifies 4 types of emotional dependence relative to the aspect of bonding with the other person (relational, affective, co-dependent, and bi-dependent) unlike the PAD-Q, which identifies 7 types relative to the relationship between the subject and his or her personality profile; therefore, this makes the comparison between the two tests completely useless, concerning the specific purposes of the PAD-Q. The "Love Addiction Screening Test" (LAST) [24], is probably the best construct with which to compare in general, relative to the result, the PAD-Q. Based on these considerations, it was necessary to create the Perrotta Affective Dependence Questionnaire (PAD-Q) to take into account all the features of the proposed new model (PAD-M).

The Perrotta Affective Dependence Questionnaire (PAD-Q) is a psychometric instrument designed to answer the diagnosis of affective dependence, regardless of the etiology of the dysfunction and the psychopathological personality characteristics of the subject. The questionnaire is structured to focus on both the diagnosis of affective dependence and the identification of one or more pathological sub-styles that can define the subject's dysfunctional behaviour. For this reason, comparison with the LAST was only possible for the final overall score; however, statistical analysis confirmed what was hoped for, namely that the PAD-Q has a well-defined and stable construct (R = 0.999; $p \leq 0.001$), the variables are well represented (R = 0.955; $p \leq 0.001$), and it is positively correlated with another construct that has already been validated (R = 0.961; $p \leq 0.001$).

Limitations, implications for Clinical Practice, and prospects

In this validation analysis, the main limitation encountered concerns the co-items, which cannot be compared with the entire LAST but only with the final overall score, as the basic models are different and identify items that are not comparable with each other; for these reasons, it was not possible to carry out further statistical analysis, related to the multiple methods-multiple traits matrix, SEM structural equation model, individual item property analysis, and IRT analysis. However, this limitation did not prevent the statistical analysis carried out from giving good results in terms of stability, effectiveness, and efficiency, thus validating the psychometric tool. Through the use of the Perrotta Affective Dependence Model (PAD-M), it was therefore possible to construct a questionnaire that would concretely realize the need to recognize, in terms of intensity and frequency, the symptomatology of affective dependence. Prospects will be geared toward administering the PAD-Q to a broader population to refine the assessment at the diagnostic stage, with emphasis on the specific etiology of the related clinical condition.

Conclusion

The current international clinical approach to the construct of affective dependence fails to fully and comprehensively explain its entire symptomatic landscape; this limitation can be resolved by considering affective dependence not only as a behavioural addiction but as a specific symptom of a precise dysfunctional personality framework. Thus, the identification of all the peculiar features is functional for psychotherapeutic intervention, and for structurally and functionally framing both the clinically relevant meaning and its lighter forms. Perrotta Affective Dependence Questionnaire (PAD-Q) meets this clinical need, in that it is a psychometric instrument with a well-defined and stable construct (R = 0.999; $p = p \leq 0.001$), with the variables well represented (R = 0.955; $p = p \leq 0.001$) and positively correlated with another construct already validated (R = 0.961; $p \leq 0.001$), to identify the clinically relevant condition of affective dependence.

Institutional review board statement

All participants were assured of compliance with the ethical requirements of the Charter of Human Rights, the Declaration of Helsinki in its most up-to-date version, the Oviedo Convention, the guidelines of the National Bioethics Committee, the standards of "Good Clinical Practice" (GCP) in the most recent version, the national and international codes of ethics of reference, as well as the fundamental principles of state law and international laws according to the updated guidelines on observation studies and clinical trial studies.

Informed consent statement

Subjects who gave regular informed consent agreements were recruited; moreover, these subjects requested and obtained from GP, as the sole examiner and project manager, not to meet the other study collaborators, thus remaining completely anonymous.

Data availability statement

The subjects who participated in the study requested and obtained that GP be the sole examiner during the therapeutic sessions and that all other authors be aware of the participant's data in an exclusively anonymous form.

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The author who contributed to the work is 1. The single author has read and approved the final manuscript.

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