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Research Article

“Perrotta–Marciano questionnaire on the grade of awareness of one’s deviant and criminal behaviors” (ADCB–Q–2) and the “Criminal spectrum”: Development, Updates, Regulation, and Validation of a new psychometric instrument

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Abstract

Introduction: Absent in the literature is the category of “criminal spectrum” as a macro container that includes all those deviant, antisocial, and psychopathic behaviors, thereby generating confusion and interpretative distortions, as in the case of antisociality and psychopathy among them considered in some cases as synonyms.

Methods: Updated the Perrotta-Marciano Questionnaire on the state of awareness of one’s deviant and criminal behaviors (ADCB-Q), from 30 items to 40 items and with 2 subscales to differentiate deviant from antisocial behaviors (ADCB-Q-2), to make comparisons with the Deviant Behavior Variety Scale (DBVS) and the Hare Psychopathy Checklist-Revised (PCL-R).

Results: Statistical analysis showed that the second edition of the test has a well-defined and stable construct ($R = 0.999$; $p \leq 0.001$), and is positively correlated with the other 2 compared tests, the DBVS ($R = 0.943$) and the PCL-R ($R = 0.966$). A comparison of comparable items returned an $R = 0.999$ with a 99.9% equal value.

Conclusion: Defining the “criminal spectrum” as a dysfunctional pattern consisting of a clinically relevant cross-cutting condition in which the subject manifests deviant, borderline, histrionic, narcissistic, antisocial, and psychopathic behaviors, the Perrotta-Marciano Questionnaire on the State of Awareness of One’s Deviant and Criminal Behaviors (ADCB-Q-2) is a valid, efficient, effective and stable psychometric tool to identify in behavioral profiles all the behaviors that fall within the “criminal spectrum”.



Background

The phenomenon of “deviance” occupies a central position in social science topics and can be related to morality, social order, and social inequality [1]. Deviant behavior differs from criminal behavior in the type of violation achieved: violation of a social norm identifies the deviant condition, while violation of the legal norm identifies the criminal one [2]. Its genesis has been traced back to the 1940s and is attributed to Merton (1938) and Sellin (1938), scholars belonging to the Chicago School of Sociology, who defined deviance as a topic of analysis in socio-criminogenesis, a field encompassing research in criminology, psychiatry, psychology, and sociology [3].

Research, to understand the phenomenon of deviance, raises the question of “whether deviant acts (and therefore deviant individuals) are born or society labels them as such”. This is a central topic in the study of deviance, with essentialist and positivist approaches arguing that deviant individuals are born with specific traits that influence their behavior, while constructivist scholars argue that society marks individuals as deviant (Thio et al. 2013). To expand their idea of the presence of deviant traits in individuals, positivists have attempted to identify specific characteristics of this phenomenon, which has led to the formulation of many theories. The most common positivist theories include social learning theories (Bandura, 1978; Akers and Lee, 1999; Akers, 2017), strain theory (Cohen, 1955; Cloward, 1959), anomie theory (Merton, 1938), self-control theory (Akers, 1991; Hirschi and Gottfredson, 2000), deterrence theory (Gibbs and Erickson, 1975; Warr and Stafford, 1991), differential association theory (Sutherland, et al. 1992). An individual’s inclination to engage in deviant acts is what distinguishes a deviant from a nondeviant. This framework dates back to the sociobiological, psychological, and criminological research of Italian naturalists who attempted to identify the biological characteristics or unique psychological traits of deviants (Lombroso-Ferrero, 1911). The biological orientation has now promoted more sophisticated approaches, assuming the presence of specific genes or genomic segments as evidence of inclination toward addictive and risk-taking behaviors (Shostak, et al. 2009; Linnér, et al. 2019; Mills and Tropf, 2020). These studies belong to sociogenomics, a discipline that links genetics and sociology (Udry, 1995; Duster, 2006 a,b; Mills and Tropf, 2020). While positivist theorists state that an act is seen as deviant because it breaks the norms of a particular society, constructivists note that some acts are perceived as deviant only in a particular context but are not universally classified as deviant and distinguished between deviance and crime. The most relevant constructivist theorists include labeling theories (Erikson, 1962; Lemert, 1967; Ben-Yehuda, 1990; Becker, 1995, 2008), symbolic interactionism (Clinard and Meier, 2015), phenomenological theories (Matza and Blomberg, 2017), and social conflict theories (Foucault, 1971; Jensen et al., 1978; Mulini, 1981; Hagan et al., 1985; Katz, 1988; Henry and Milovanovic, 1996; Milovanović, 1996; Hagan and McCarthy, 1998). Constructivists argue that it is not the act that is deviant, but society’s act of labeling it as such that makes it deviant. In this sense, one must recognize the role of cultural differences in labeling an act as deviant (Goffman,

1978; Clinard and Meier, 2015), although criminal acts are universally defined as deviant. Deviance is relative in that it depends on the context in which it is judged and how society labels a particular act or individual. Moreover, deviance is the result of subjective experience, as each person provides some meaning to the acts in which he or she is involved. At the same time, deviance is voluntary, being regarded as a person’s expression or choice (Erikson, 1962; Ben-Yehuda, 1990; Becker, 2008). In an integrative approach, Thio, et al. (1978) argue that the above two frameworks are complementary. Therefore, the authors distinguish between deviance with higher consensus and deviance with lower consensus. Deviance with higher consensus includes acts that are generally perceived as deviant and cause greater loss, while deviance with lower consensus refers to acts that are seen as deviant by fewer people because such acts cause less loss (Thio, et al. 2013) [4].

Early psychological approaches to deviance emphasized the biological and psychodynamic roots of deviance. Numerous researchers tried to predict crime based on personality traits. For example, research by German-born British psychologist Hans Eysenck proposed that criminality stems from high levels of psychoticism (characterized by antisocial, nonempathetic, and impulsive behavior), extroversion (social, accommodating, optimism, and enjoyment of excitement) neuroticism (characterized by feelings of inferiority and unhappiness and by hypochondria, guilt and anxiety). The psychoanalytic theory emphasizes the role of socialization, which argues that parents instill in their children respect for rules and authority, represented by the Super-ego. The Superego is an internalized control system that motivates people to follow social rules, to obey law and order. That is, conformity is thought to be an important part of a person’s self-concept. Crime can be seen as a product of forces other than biological factors or parental socialization practices. However, while the absence of a stable home and the presence of negative socializing agents may play a role, those aspects of socialization may in turn be influenced by other factors, such as poverty within the home and in the broader community. Approaches focusing on differences among individuals are useful in explaining why some people break rules more often than others. These approaches, however, do not help explain why people are deviant in some situations but not in others, why people label others as deviant, or how they react toward deviant individuals. Other perspectives on deviance include evolutionary theory, which argues that physically stigmatized (deviant) group members may receive hostile and exclusionary reactions from others because they pose a threat to group survival [5]. Three main criminal theories have emerged after decades of research on the criminal mind: a) psychodynamic theory (S. Freud, 1899, 1901, 1921; Bowlby, 1982) focuses on a person’s early childhood experience and how it influences the likelihood of committing a crime; b) behavioral theory (Bandura, 1978) focuses on how perceptions of the world influence behavior; c) cognitive theory (Kohlberg, 1984) focuses on how people manifest their perceptions and how these can lead to a life of crime [6].

In the literature, however: <<(…) the concepts of “deviance” and “criminality” are often confused or grouped, following a



sociological logic. In the clinic, there is a need to distinguish them, speaking of “deviant behaviors” as active human acts that result in a violation of a social norm determined by the community and that does not provide a sanction of a legal nature (e.g., personal use of drugs), while from “criminal behaviors” as active human acts that result in a violation of an exclusively legal norm and that provides a sanction of a civil-administrative nature (compensation for damages, restitution, demolition, suspension, disbarment, and administrative detention) or criminal (fine, fine, imprisonment and arrest). Even more succinctly, we can consider “Deviant and Criminal Behavior” (DCB) as all those active human acts that constitute a violation of a social and/or legal rule, and their transgression provides for the application of a punitive sanction. Based on this assumption, we propose: a) the Graded Antisocial Model (GA-M), which considers antisociality as a graded phenomenon that over time is reinforced through active behaviors that are not limited by the social context of reference, becoming in fact then a structured personality disorder only when the individual’s self-centeredness becomes rigid and dysfunctional; b) the Antisocial Severity Scale (AS-S), which draws the pathological and dysfunctional evolution of antisociality, in five levels (yellow for emotional dysfunctionality, orange for self-centeredness, red for violation of social rules and violence to property, animals and people, purple for severe violation of legal rules and black for structured psychopathology); c) the Perrotta-Marciano Questionnaire on the state of awareness of one’s deviant and criminal behaviors (ADCB-Q), in 30 items on a 0-5 scale “revised” (as originally the first version of the test was calibrated on the 1-6 scale), which defines both deviant and criminal tendency and the degree of awareness of one’s pathological state (...)>> [7].

In the literature, the concept of the “criminal spectrum”, understood as a macro-category encompassing all those deviant, antisocial, and psychopathic behaviors, is absent, and psychometric tests that study the personological set-up related to psychopathological personality traits return patterns that fragment this dimension, often creating confusion and interpretative distortions, as is the case with antisociality and psychopathy often confused and associated as synonyms, although several studies suggest the exact opposite [8]. Perrotta-Marciano Questionnaire on the state of awareness of one’s deviant and criminal behaviors (ADCB-Q), although not clarifying this in detail, in its first edition, suggests precisely the separation, consistent with the studies of the Perrotta Integrative Clinical Interviews, second edition (PICI-2) [9].

Aim

A validation study was conducted to determine whether the proposed psychometric instrument is capable of being reliable and valid for the recognition of deviant and criminal behavior, within a framework of antisociality and psychopathy, regardless of the patient’s psychopathological condition, which may more or less justify it. The present discussion is therefore intended to try to determine whether, in the current state of scientific knowledge, it is possible to validate the proposed psychometric instrument relative to the clinical condition under investigation.

Materials and methods

Study design

Development, updates, regulation, and validation of a new psychometric instrument of the criminal spectrum (Perrotta-Marciano Questionnaire on the state of awareness of one’s deviant and criminal behaviors, ADCB-Q), that was based on the model of the Graded Antisocial Model (GA-M) and the Antisocial Severity Scale (AS-S). The (GA-M) interpretive model of human agency, concerning antisociality understood as “an all-encompassing phenomenon of conduct aimed at the violation of one or more social and legal norms, imposed by a predefined authority or social group”, is based on the concept that antisociality is a graded phenomenon that over time is reinforced through active behaviors that are not limited by the social context of reference, becoming then a structured personality disorder only at the moment when the individual’s egocentricity becomes rigid and dysfunctional; such a model thus describes the psychopathological evolution of antisociality, which turns out to be the most extreme and severe form, the opposite pole of the maladaptive behaviors of childhood and pre-adolescence. The scale (AS-S), related to the graduation of antisociality, proposes an increasing level of severity of antisociality that originates from the dysfunctional management of anxious emotion from which the feelings of frustration, anger, rage, and wrath originate (level 1, yellow color); such moments are characterized by strong aggression and impulsivity, but are still contained in their manifestation, except in private and family contexts. When such behaviors are also externalized in more extended contexts and in the presence of strangers, the subject begins to become more self-centered, feeding the narcissistic core; he also learns to use deception and manipulation as active tools to obtain his ends, thus procuring the centrality of attention through the transgression of rules that are still social and not legal (level 2, orange color). Verbal violence and minor attempts at physical violence, adopted in childhood and pre-adolescence, mostly deviant and non-criminal acts, become increasingly serious and structured, just as systematic intolerance of family and social rules becomes the springboard for beginning to transgress more and more important rules; this stage is characterized by an exacerbation of one’s level of violence, which can also become physical and be unleashed against objects, animals and even people (level 3, color red). Violence is now systematically verbal and physical, pre-set social boundaries are broken down and self-centeredness is total and the subject is already approaching adolescence; the narcissistic core becomes preponderant over the boundaries of others, and the subject feels compelled (as if it were a real vital necessity) to get what he or she wants even by violating the rights and legal rules imposed by society to live civilly (level 4, purple color). At this point, the subject is self-centered and his antisociality easily merges and blends with the narcissistic traits nurtured over time, becoming, in fact, a cluster B patient, egosyntonic and unable to recognize in his conduct the deep reasons for the personality disorder (level 5, black color). Taking into account, however, that deviant acting out can coexist with criminal acting out, this graded scale provides a developmental snapshot of the fourth and fifth-level antisocial traits, but they can both coexist, reinforcing each other (Figure 1) [7].

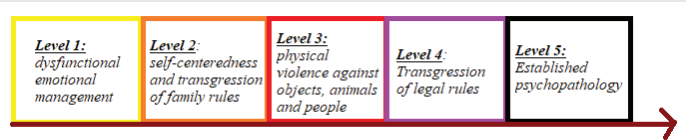


Figure 1: Perrotta Marciano Antisocial Severity Scale (AS-S) [7].

Materials and methods

Starting from the Graded Antisocial Model (GA-M) and the Antisocial Severity Scale (AS-S), it was decided to design a questionnaire to analyze the state of awareness of deviant and criminal behavior (Perrotta-Marciano Questionnaire on the state of awareness of one's deviant and criminal behaviors, ADCB-Q) [7], not to make a personality diagnosis but to define the presence or absence of deviant and criminal behavior and the degree to which the subject is aware of his or her deviant or criminal behavior. In this study, we compare the outcomes with a second and third questionnaire, the Deviant Behavior Variety Scale (DBVS) [10] for the population group under the age of 19 years and the Hare Psychopathy Checklist-Revised (PCL-R) [11] for the population groups aged 19 years and older, to test its reliability and validity.

The psychometric test administered and subsequently evaluated for the purposes of the present research was remodeled based on the first version [7], as the following was noted: 1) section A lacked questions related to sexual orientation, geographic location of origin (nationality), and residence/ domicile/current abode; 2) in section A, the age range 12-14 was changed to < 14 years; 3) section B needed to distinguish deviant behavior from antisocial and psychopathic behavior, based on violation of a social or legal norm; 4) in section B, 2 sub-areas of calculation needed to be provided to estimate the level of impairment for both deviant and antisocial and psychopathic profiles; 5) in section B, it needed to be clarified that the summation of the 2 sub-areas produced the final result of the test with regard to the tendency or otherwise of conduct falling within the criminal spectrum; 6) in section B, the research items needed to be expanded so that the section on antisociality and psychopathy could also be integrated. Based on these changes, the version of the ABDC-Q-2 was produced. [All. 1].

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-Marciano Questionnaire on the state of awareness of one's deviant and criminal behaviors (ADCB-Q-2) and the Deviant Behavior variety Scale (DBVS) [10] and Hare Psychopathy Checklist-Revised (PCL-R) [11], and in the second instance, after three months, again using the ADCB-Q-2, to allow full statistical analysis for validation of the latter, to assess the stability of outcomes.

The establishment of the new macrocategory "criminal spectrum" is functional for several reasons: 1) various

behaviors, consequences of the dysfunctional personality traits (such as borderline, narcissistic, histrionic, antisocial and psychopathic), are at the origin of criminal acting, because they force the dictate of social and legal norms to come to the realization of their own egocentric needs, and therefore the category "criminal spectrum" structurally and functionally organizes all those traits that could have a criminal finding; 2) the psychopathological orientation of these behaviors is predominantly of cluster B (dramatic), taking into account that the category of psychopaths is different from that of antisocials and also groups traits of psychotic patients, such as paranoid and delusional; 3) if one analyzes the structure of the Perrotta-Marciano Questionnaire on the state of awareness of one's deviant and criminal behaviors (ADCB-Q-2) it is possible to reconstruct both the exact identification of criminal behaviors but also the exact location of dysfunctional traits (Table 1).

Starting from the definitions found in the literature of deviant [12-19], histrionicism [20-22], borderline [23-25], narcissism [26-28], antisociality [7, 29-31], and psychopathy [32-36] (different from the concept of psychosis [37-43]), it is, therefore, possible to define the "criminal spectrum" as *Dysfunctional pattern consisting of a clinically relevant cross-sectional condition, in which the subject manifests deviant, borderline, histrionic, narcissistic, antisocial, and psychopathic behaviors, such that they foster their emotional, cognitive, and behavioral dysfunctionality in comparison with the conduct concerning social and legal norms that would be expected from another fellow member of their same environmental context* (Table 2).

The stages of the research were divided as follows: 1. Selection of the population sample. 2. Clinical interview with each population group. 3. Administration of psychometrical tests. 4. Data processing after administration. 5. Comparison of the data obtained. 6. Administration of the ADCB-Q-2 [All. 1] after three months, to assess the stability of outcomes, and related data processing.

Setting and participants

Inclusion criteria of the population are: 1) age between 14 and 66 years; 2) sexual gender m/f defined; 3) Italian nationality; 4) absence of psychiatric diagnosis related to antisocial and/or psychopathic symptoms. Exclusion criteria of the population are 1) age under 14 and over 66 years; 2) sexual gender m/f not defined; 3) foreign nationality, even if resident, domiciled, or dwelling in the national territory; 4) presence of psychiatric diagnosis related to antisocial and/or psychopathic symptoms; 5) Informed consent given in a partial, illegitimate, or withdrawn manner. The chosen setting, tenaciously standing during the continuation of the pandemic (already in progress since the beginning of the present published research [7]), was the online platform via Skype and WhatsApp Video Calls, for clinical interviews (acquaintance and restitution) for self-administration, an online link via a prearranged, anonymous website with automatic sealing (verified by operators at data collection) was used. The informed consent of the participants over the age of 18 was obtained directly from the participants; the informed consent of the participants under the age of 18 was obtained through the parents or those exercising parental or

**Table 1: Comparison by item: type of dysfunctional trait.**

N	Dysfunctional Behaviors	Psychopathological Trait Evocated
1	Smoking (or desiring) cigarettes in an enclosed public place, despite the ban	BORDERLINE
2	Smoking at least 20 cigarettes a day or at least 3 in 1h at least 2 times a day to relieve nervous tension or stress	BORDERLINE
3	Taking caffeine to the extent of more than 3 daily coffees or products containing it, or feeling the need for it	BORDERLINE
4	Not attending school or work hours, without prior notice or permission or for health reasons	BORDERLINE
5	Failing to complete one's assigned professional or school tasks, within the stipulated time limit	BORDERLINE
6	Spending at least 4 hours a day (even if not continuous) on the internet, chatting or playing video games or watching videos, or creating content, outside the work context	BORDERLINE
7	Taking medication without a prescription or with abuse in its use	BORDERLINE
8	The tendency toward boredom and feelings of emptiness and isolation	BORDERLINE
9	Unwarranted, excessive, and/or dangerous angry reactions	BORDERLINE
10	Poor investment in feelings, with a more or less marked lack of empathy	BORDERLINE
11	Parasitic lifestyle (being emotionally and economically dependent on other people while being able to secure independence by putting in more effort and commitment)	BORDERLINE
12	Acts and/or behaviors that are impulsive and beyond what would be expected in the context	BORDERLINE
13	Inability to accept one's responsibilities when they are pointed out	BORDERLINE
14	Fleeting or low-key affective-sentimental relationships	BORDERLINE
15	Early behavioral problems, in childhood and/or preadolescence, without the commission of unlawful acts or behaviors	BORDERLINE
16	Juvenile delinquency, with or without a criminal conviction	ANTISOCIAL
17	Desire to commit acts or behavior deemed by law to be unlawful, in adolescence and/or adulthood, or irrepressibility in the commission of crimes	ANTISOCIAL
18	Lack of remorse and guilt when committing acts or behaviors that hurt others' feelings	PSYCHOPATHIC
19	Physical violence on inanimate objects	PSYCHOPATHIC
20	Verbal or physical violence against persons, for purposes other than self-defense	PSYCHOPATHIC
21	Verbal or physical violence to animals, for purposes other than self-defense	PSYCHOPATHIC
22	Attempted or procured state of death, to animals or persons, by voluntary actions and/or behavior	PSYCHOPATHIC
23	Permanently damaging or soiling public or religious or sacred places	ANTISOCIAL
24	Actively participating in organizing a fight or otherwise assaulting someone or something	ANTISOCIAL
25	Driving a mechanical vehicle without a regular license or a means of safety	ANTISOCIAL
26	Stealing items from commercial stores	ANTISOCIAL
27	Stealing valuable goods or money from parents or friends surreptitiously, including through stratagems and deception or manipulation	NARCISSISTIC
28	Drinking alcohol irresponsibly, procuring a state of voluntary or conscious altered consciousness	NARCISSISTIC
29	Driving while intoxicated and/or in an altered state of consciousness due to substance abuse or riding in a car with the driver in an altered state of consciousness due to alcohol or drug use	PSYCHOPATHIC
30	Gambling, through betting or slot machines, with foreign exchange money or currencies, for economic amounts exceeding the recreational purpose	NARCISSISTIC
31	Carping the trust of others, using lies and manipulation, loquacity and charm, for one's advantage	NARCISSISTIC
32	Sexual promiscuity/hypersexuality	NARCISSISTIC
33	Tendency to perverse sexuality (masochistic and/or sadistic, paraphiliac) and/or engagement in sexual intercourse with strangers or casual partners not protected by precautionary means (e.g., condom)	PSYCHOPATHIC
34	Passion for owning, possessing, or using weapons and/or impulse in their use	PSYCHOPATHIC
35	Improper or pathological eating behaviors (anorexia, bulimia, uncontrolled and/ or compulsive eating)	NARCISSISTIC
36	Consciously lying in order not to face one's responsibilities or to gain an advantage	NARCISSISTIC
37	Taking a drug without a prescription, willfully abusing it	NARCISSISTIC
38	Taking drugs such as cannabinoids (natural or synthetic) / marijuana/hashish, without any medical benefit or beyond the limits prescribed by the health care provider	PSYCHOPATHIC
39	Taking drugs such as cocaine, heroin, amphetamines, hallucinogens, and/or other natural or synthetic substances, without any medical benefit or beyond the limits prescribed by the healthcare provider	PSYCHOPATHIC
40	Purchase for sale to others one or more narcotic substances	PSYCHOPATHIC



Table 2: Clinical definitions.

Notion	Definition
<i>Deviant</i>	A dysfunctional Pattern consists of one or more behaviors aimed at noncompliance with the expected standards of one or more social norms, such as engendering a socially relevant reproach or otherwise disapproving response concerning the relevant environmental context.
<i>Histrionicism</i>	Dysfunctional Pattern of constant attention-seeking from others and the dramatic expression of feelings and emotions; always concerned about their image, people suffering from this disorder may use physical appearance and seduction to attract attention, but also display childish behavior or exacerbate a condition of fragility to receive care and protection
<i>Borderline</i>	Dysfunctional Pattern of instability in personal relationships, intense emotions and poor ability to regulate them, low self-esteem and impulsiveness, chronic sense of emptiness and loneliness; a view of self and other that can quickly shift from opposing and poorly integrated representations; extreme sensitivity to abandonment (real or imaginary) to which he may react with desperate attempts to avoid it, maladaptive coping of emotional states that may result in self- and hetero- aggression, even to the point of activating suicide attempts.
<i>Narcissism</i>	Dysfunctional Pattern characterized by a sense of superiority, need for admiration, and lack of empathy for others; feeling grandiose, they believe they are admired and envied by others and act as if they have a special right to fulfill their own needs and desires, viewing the other as a means to that end; they are sensitive to failure and criticism, which, by disconfirming their grandiosity, can arouse anger but also induce depressive states.
<i>Antisociality</i>	Dysfunctional Pattern characterized by willful and conscious violation and disregard for the rights of others, not valuing legal norms. Uses others to achieve their utilitarian ends, with frequent use of omissions, lies, and aggressive and impulsive conduct.
<i>Psychopathy</i>	Dysfunctional Pattern characterized by poor or deficient empathy, with functional deficits in emotional language and internal and interpersonal relationships, with markedly narcissistic, antisocial, and borderline behaviors. One uses charm and talkativeness to manipulate people, making dysfunctional use of anger and impulsivity, up to and including the most serious violation of social and legal rules.
<i>Criminal Spectrum</i>	Dysfunctional Pattern consists of a clinically relevant cross-sectional condition, in which the subject manifests deviant, borderline, histrionic, narcissistic, antisocial, and psychopathic behaviors, such that they foster their emotional, cognitive, and behavioral dysfunctionality in comparison with the conduct concerning social and legal norms that would be expected from another fellow member of their same environmental context.

legal authority. All participants participated voluntarily. They were informed that the questionnaire would be anonymous and that the data were strictly confidential and that no one they knew would have access to their answers. The questionnaires took about 30 minutes to complete. The present research work was conducted from June 2021 to June 2023.

The final selected population sample was 3,324 participants, divided into 9 groups. The selected population sample is significantly representative, precisely because of its numerosity (N = 3,324), and all age groups are distributed from 9.0% to 14.7%; in particular, it emerges with extreme interest that the most interesting age groups in terms of numerosity of individuals with criminal behavior are those of 19 - 24 (12.3%) and 31 - 37 (14.7%), while the 38-42 group (9.0%) is represented in smaller numbers (Table 3).

Below are the frequencies related to gender (Table 4), sexual orientation (Table 5) and familial status (Table 6).

Results

Development, updates, and regulation of the new questionnaire (Perrotta-Marciano Questionnaire on the state of awareness of one's deviant and criminal behaviors, ADCB-Q-2)

The Perrotta-Marciano Questionnaire on the state of awareness of one's deviant and criminal behaviors (ADCB-Q-2) is structured in two parts: the first part (Section A) is devoted to preliminary data on sexual gender, sexual orientation, nationality, residence, age, personal parental and family status, and lists of Internet activities and personal motivations that lead the subject to consciously engage in deviant behavior and criminal behavior; the second part (Section B), on the other hand, is devoted to the actual questionnaire.

Specifically, the questionnaire consists of 40 items on the L0-5 scale (L1-6 was provided in the first version, with a scale of aggravating factors later eliminated), and lists

Table 3: Population sample (numerosity).

Age	Male	Female	Total
14-18	185	172	357 (10.7%)
19-24	207	202	409 (12.3%)
25-30	184	148	332 (10.0%)
31-37	331	157	488 (14.7%)
38-42	158	143	301 (9.0%)
43-48	192	170	362 (10.9%)
49-54	183	169	352 (10.3%)
55-60	197	181	378 (10.7%)
61-66	193	152	345 (11.4%)
Total	1,830 (55.1%)	1,494 (44.9%)	3,324 (100%)

for each item a deviant and/or criminal hypothesis. From the listed hypotheses, one must select in column "1" those that reflect one's individual history, indicating a numerical value according to a severity scale: 0 = Never, in no case; 1 = Occasionally, only when solicited or not at holiday or social events, with a frequency of not less than one month; 2 = Bi-weekly frequency; 3 = Weekly frequency; 4 = Daily frequency; 5 = Multi-day frequency. The initialing of the value will take place in "column A" if the subject considers that behavior to be consistent with the prohibition (i.e., it is right for that behavior to be considered wrong by society), or it will take place in "column B" if the subject considers that behavior to be inconsistent with the prohibition (i.e., it is right for him despite society considering it wrong). In the case of initialing in column B, the subject must justify the answer by entering the content in the corresponding space in "column C". Regardless of the initials in column A or B, the corresponding final value for each item will always be from 0 to 5; however, the initials in column B will be discussed during any subjective psychotherapy.

For each ITEM, sum the value from 0 to 5 initiated, regardless of whether it is in column A or B; sum the values for each partial total and the overall final total. The sum of the first



Table 4: Frequencies referred to the population sample analyzed, relative to the variable "Gender": positive responses above 50% in the Perrotta-Marciano Questionnaire on the State of Awareness of One's Deviant and Criminal Behavior (ADCB-Q-2).

Gender						
Age	Male	Male-N(%) ADCB-Q-2 (yes)	Female	Female-N(%) ADCB-Q-2 (yes)	Total	Total-N(%) ADCB-Q-2 (yes)
14-18	185	10 (5.4%)	172	11 (6.4%)	357 (10.7%)	21 (5.9%)
19-24	207	16 (7.8%)	202	14 (6.9%)	409 (12.3%)	30 (7.3%)
25-30	184	21 (11.4%)	148	8 (5.4%)	332 (10.0%)	29 (8.7%)
31-37	331	23 (6.9%)	157	12 (7.6%)	488 (14.7%)	35 (7.2%)
38-42	158	12 (7.6%)	143	12 (8.4%)	301 (9.0%)	24 (8.0%)
43-48	192	15 (7.8%)	170	16 (9.4%)	362 (10.9%)	31 (8.6%)
49-54	183	12 (6.6%)	169	11 (6.5%)	352 (10.3%)	23 (6.5%)
55-60	197	16 (8.1%)	181	16 (8.8%)	378 (10.7%)	32 (8.5%)
61-66	193	17 (8.8%)	152	17 (11.2%)	345 (11.4%)	34 (9.9%)
Total	1,830 (55.1%)	142 (7.7%)	1,494 (44.9%)	117 (7.8%)	3,324 (100%)	259 (7.8%)

The third, fifth, and seventh Columns show data on the number of affirmative responses by male, female, and total sexual gender in the sample.

Table 5: Frequencies referred to the population sample analyzed: Non-heterosexual sexual orientation.

Sex-Orientation						
Age	Male-N(%) ADCB-Q-2 (yes)	Male- N(%) -SexOr(NH)	Female-N(%) ADCB-Q-2 (yes)	Female-N(%) -SexOr(NH)	Total-N(%) ADCB-Q-2 (yes)	Total- N(%) -SexOr(NH)
14-18	10 (5.4%)	2 (20.0%)	11 (6.4%)	5 (45.5%)	21 (5.9%)	7 (33.4%)
19-24	16 (7.8%)	4 (25.0%)	14 (6.9%)	4 (28.6%)	30 (7.3%)	8 (26.7%)
25-30	21 (11.4%)	11 (52.4%)	8 (5.4%)	4 (50.0%)	29 (8.7%)	15 (51.7%)
31-37	23 (6.9%)	9 (39.1%)	12 (7.6%)	4 (33.4%)	35 (7.2%)	13 (37.1%)
38-42	12 (7.6%)	5 (41.7%)	12 (8.4%)	5 (41.7%)	24 (8.0%)	10 (41.7%)
43-48	15 (7.8%)	6 (40.0%)	16 (9.4%)	6 (37.5%)	31 (8.6%)	12 (38.7%)
49-54	12 (6.6%)	4 (25.0%)	11 (6.5%)	3 (27.3%)	23 (6.5%)	7 (30.4%)
55-60	16 (8.1%)	9 (56.3%)	16 (8.8%)	5 (31.3%)	32 (8.5%)	14 (43.8%)
61-66	17 (8.8%)	8 (47.1%)	17 (11.2%)	2 (11.8%)	34 (9.9%)	10 (29.4%)
Total	142 (7.7%)	58 (40.1%)	117 (7.8%)	38 (32.5%)	259 (7.8%)	96 (37.1%)

The second column shows data on the numerosity of affirmative responses, by male gender and by age group regarding ADCB-Q-2, while the third column shows data on the numerosity of affirmative responses, by male gender and by age group regarding ADCB-Q-2 for the non-heterosexual category only; using the same logic, the fourth and fifth columns show data on the female gender, and the last two columns show data on total numerosity.

Table 6: Frequencies referred to the population sample analyzed: Non-regular family status or with one or both homosexual parents.

Family-Status						
Age	Male-N(%) ADCB-Q-2 (yes)	Male-N(%) - FS (NR)	Female-N(%) ADCB-Q-2 (yes)	Female-N(%) - FS (NR)	Total-N(%) ADCB-Q-2 (yes)	Total- N(%) - FS (NR)
14-18	10 (5.4%)	2 (20.0%)	11 (6.4%)	3 (27.3%)	21 (5.9%)	5 (23.8%)
19-24	16 (7.8%)	4 (25.0%)	14 (6.9%)	2 (14.3%)	30 (7.3%)	6 (20.0%)
25-30	21 (11.4%)	6 (28.6%)	8 (5.4%)	2 (25.0%)	29 (8.7%)	8 (27.6%)
31-37	23 (6.9%)	5 (21.7%)	12 (7.6%)	3 (25.0%)	35 (7.2%)	8 (22.9%)
38-42	12 (7.6%)	3 (25.0%)	12 (8.4%)	3 (25.0%)	24 (8.0%)	6 (25.0%)
43-48	15 (7.8%)	5 (33.4%)	16 (9.4%)	5 (31.3%)	31 (8.6%)	10 (32.3%)
49-54	12 (6.6%)	1 (8.3%)	11 (6.5%)	1 (9.1%)	23 (6.5%)	2 (8.7%)
55-60	16 (8.1%)	5 (31.3%)	16 (8.8%)	4 (25.0%)	32 (8.5%)	9 (28.1%)
61-66	17 (8.8%)	4 (23.5%)	17 (11.2%)	5 (29.4%)	34 (9.9%)	9 (26.5%)
Total	142 (7.7%)	35 (24.6%)	117 (7.8%)	28 (24.0%)	259 (7.8%)	63 (24.3%)

The second column shows data on the numerosity of affirmative responses, by male gender and by age group regarding ADCB-Q-2, while the third column shows data on the numerosity of affirmative responses, by male gender and by age group regarding ADCB-Q-2 for the family status only; using the same logic, the fourth and fifth columns show data on female gender, and the last two columns show data on total numerosity.

subtotal cannot have a value less than 0 and greater than 75, the sum of the second subtotal cannot have a value less than 0 and greater than 125, and the overall final sum cannot have a value less than 0 and greater than 200.

The numerical value represents the dysfunctional and pathological tendency of the subject:

1. SUBSCALE "1B": DEVIANT BEHAVIORS:
 - a) 0 = The subject does not exhibit deviant behaviors;
 - b) 1-15 = The subject exhibits minimal deviant inflexions;
 - c) 16-30 = The subject exhibits modest deviant tendencies;
 - d) 31-45 = The subject exhibits moderate deviant tendencies;
 - e) 46-50 = The subject exhibits significant deviant tendencies;
 - f) 51-75 = The subject presents severe deviant tendencies.
1. SUBSCALE "2B": ANTISOCIAL AND PSYCHOPATHIC BEHAVIORS:
 - a) 0 = The subject does not exhibit criminal behavior;
 - b) 1-25 = The subject exhibits minimal criminal inflexions;
 - c) 26-50 = The subject exhibits modest criminal tendencies;
 - d) 51-75 = Subject presents moderate criminal tendencies;
 - e) 76-100 = The subject exhibits significant criminal tendencies;
 - f) 101-125 = The subject presents severe criminal tendencies.
2. "OVERALL TOTAL" SCALE: CRIMINAL SPECTRUM:
 - a) 0 = Flexures and criminal tendencies absent;
 - b) 1-40 = Criminal tendencies of little significance;
 - c) 41-80 = Weakly relevant criminal tendencies;
 - d) 81-120 = Moderately relevant criminal trends;
 - e) 121-160 = Significantly relevant crime trends;
 - f) 161-200 = Extremely relevant criminal trends.

Validation of the new questionnaire (Perrotta-Marciano Questionnaire on the state of awareness of one's deviant and criminal behaviors, ADCB-Q-2)

Introduction: After the selection of the chosen population sample (first phase), we proceeded with the clinical interviews (second phase), from which the first significant data emerged. The third phase of the research focused on the administration of questionnaires, the Perrotta-Marciano Questionnaire on the State of Awareness of One's Deviant and Criminal Behavior

(ADCB-Q-2) and the Deviant Behavior Variety Scale (DBVS) and the Hare Psychopathy Checklist-Revised (PCL-R).

Comparison of test structures: Based on the description of the Perrotta-Marciano Questionnaire on the State of Awareness of One's Deviant and Criminal Behavior (ADCB-Q-2) and the Deviant Behavior Variety Scale (DBVS) [7,9], the first test (in section B) consists of 30 items with dichotomous yes/no responses and 0-5 Likert scale, for a total overall score of 150 points, while the second test (DBVS) consists of 19 items with affirmative responses for a total score of 19 points; finally, the third test (PCL-R) consists of 20 items with affirmative responses for a total score of 20 points. The structural comparison, between the first and second test, concerning the population sample, shows that the difference in answers given, as a percentage (%), is always less than 3 points, confirming the proportion related to the outcome of the test, even for different structures, just as the same proportion results from comparing the first and third tests (Figure 2).

Comparing the final results of the Perrotta-Marciano Questionnaire on the State of Awareness of One's Deviant and Criminal Behavior (ADCB-Q-2) with the other 2 tests, Deviant Behavior Variety Scale (DBVS) and Hare Psychopathy Checklist-Revised (PCL-R), shows that all three results expressed as percentages are between 7.0% and 8.2%, and ADCB-Q-2 stands at 7.8%, as the intermediate value between the two poles (Table 7).

Comparing the individual items of all three tests, the following matches emerge, with $R=0.999$ and the exact match of 99.9%, for all comparisons made for comparable individual items (Table 8).

Coefficient of stability: A binary correlation analysis was conducted between the first administration of the Perrotta-Marciano Questionnaire on the state of awareness of one's deviant and criminal behaviors (ADCB-Q-2) and the second administration, which occurred after 3 months (90 days), to check the stability of the test, obtaining a Pearson's coefficient (R) of 0.999, with $p \leq 0.001$.

Factor analysis: *Principal Component Analysis (PCA)*. The analysis produced between the Deviant Behavior Variety Scale (DBVS) and the Perrotta-Marciano Questionnaire on the State of Awareness of One's Deviant and Criminal Behavior (ADCB-Q-2) reports a communality of 0.999 and a total

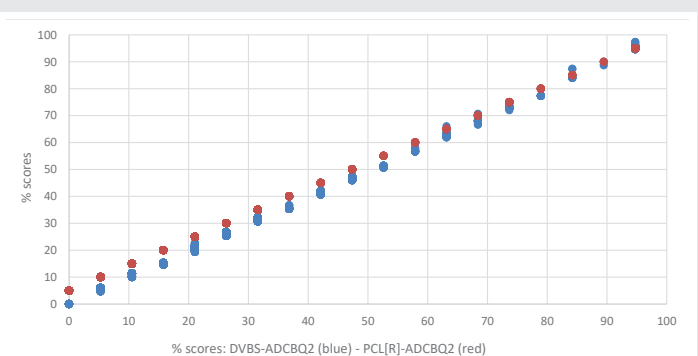


Figure 2: Comparison of the scores in %: DVBS-ADCB-Q-2 and PCL[R]-ADCB-Q-2.



explained variance of 99.86%, while the analysis between the Hare Psychopathy Checklist-Revised (PCL-R) and the Perrotta-Marciano Questionnaire on the State of Awareness of One's Deviant and Criminal Behavior (ADCB-Q-2) reports a communality of 0.996 and a total explained variance of 99.62% (Figure 3).

Validity indexes: The criterion validity index (for efficiency and accuracy) of the Perrotta-Marciano Questionnaire on the State of Awareness of One's Deviant and Criminal Behavior (ADCB-Q-2) concerning both the Deviant Behavior Variety Scale (DBVS) and the Hare Psychopathy Checklist-Revised (PCL-R) is 0.999, while the construct validity index is 0.965 for the first test (DBVS) and 0.981 for the second test (PCL-R). The convergent validity between ADCB-Q-2 and DBVS is 0.943 and $p \leq 0.001$, while ADCB-Q-2 and PCL-R are 0.966 and $p \leq 0.001$.

Table 7: Frequencies referred to the population sample analyzed: DVBS-test, PCL-R test, and ADCB-Q-2-test.

Test-scores	N	Age-range	Yes>50%	(%)	Mean ± SD
DVBS	3,324	14 -18 y	232	7.0%	3.8 ± 3.5
PCL-R	3,324	> 18 y	271	8.2%	4.5 ± 3.8
ADCB-Q-2	3,324	> 14 y	259	7.8%	37.8 ± 35.3

Table 8: Comparisons between tests and between items (binary comparison): ADCBQ2-DVBS and ADCBQ2-PCL[R]. R = Pearson's coefficient. P = p-value.

Test comparisons	Item comparisons	Exact match	R
ADCBQ2 (1) – DVBS (2)	36 (1) – 2 (2)	99.9%	0.999
ADCBQ2 (1) – DVBS (2)	39 (1) – 3 (2)	99.9%	0.999
ADCBQ2 (1) – DVBS (2)	25 (1) – 4 (2)	99.9%	0.999
ADCBQ2 (1) – DVBS (2)	24 (1) – 5 (2)	99.9%	0.999
ADCBQ2 (1) – DVBS (2)	37 (1) – 6 (2)	99.9%	0.999
ADCBQ2 (1) – DVBS (2)	23 (1) – 7 (2)	99.9%	0.999
ADCBQ2 (1) – DVBS (2)	38 (1) – 8 (2)	99.9%	0.999
ADCBQ2 (1) – DVBS (2)	26 (1) – 9 (2)	99.9%	0.999
ADCBQ2 (1) – DVBS (2)	4 (1) – 10 (2)	99.9%	0.999
ADCBQ2 (1) – DVBS (2)	40 (1) – 11 (2)	99.9%	0.999
ADCBQ2 (1) – DVBS (2)	5 (1) – 13 (2)	99.9%	0.999
ADCBQ2 (1) – DVBS (2)	39 (1) – 15 (2)	99.9%	0.999
ADCBQ2 (1) – DVBS (2)	34 (1) – 16 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	36 (1) – 4 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	31 (1) – 5 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	18 (1) – 6 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	10 (1) – 8 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	11 (1) – 9 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	12 (1) – 10 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	32 (1) – 11 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	15 (1) – 12 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	13 (1) – 15 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	5 (1) – 16 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	14 (1) – 17 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	16 (1) – 18 (2)	99.9%	0.999
ADCBQ2 (1) – PCL[R] (2)	17 (1) – 20 (2)	99.9%	0.999

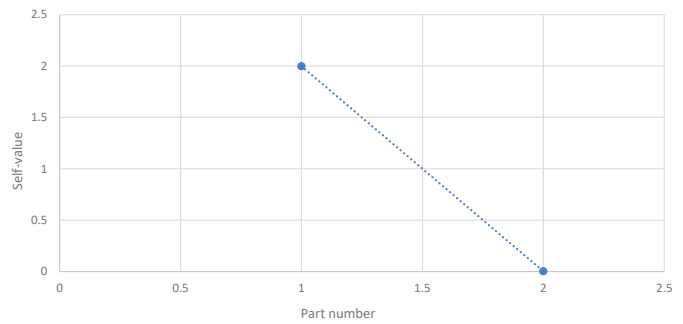


Figure 3: Screen plot_DBVS-ADCBQ2 / PCLR-ADCBQ2.

Discussion

Perrotta-Marciano Questionnaire on the State of Awareness of One's Deviant and Criminal Behavior (ADCB-Q-2) is a psychometric instrument designed to answer a twofold clinical question: first, regarding the presence of deviant, antisocial, and psychopathic behaviors in the personality framework of the subject under investigation; and second, regarding the need to know how aware or unaware the subject under investigation is of his or her criminal tendency. The usefulness of the questionnaire lies precisely in determining the presence or absence of conduct falling within the criminal spectrum, i.e., that psychopathological category that groups deviant and antisocial traits (typical of Cluster B personalities) [44–56] and psychopathic traits, all of which have strong criminal behavioral traction. The binary correlation analysis conducted between the first administration of the Perrotta-Marciano Questionnaire on the State of Awareness of One's Deviant and Criminal Behavior (ADCB-Q-2) and the second administration of the same test after 3 months (90 days) to check its stability, obtained a Pearson's coefficient (R) of 0.999, with $p \leq 0.001$, showing that the outcome is consistent with its reliability over time, even when compared with the 2 proposed psychometric tests of the Deviant Behavior Variety Scale (DBVS) and the Hare Psychopathy Checklist-Revised (PCL-R). With these 2 tests, Pearson's coefficient (R) was always 0.999, with a construct validity index of 0.965 for the first test (DBVS) and 0.981 for the second test (PCL-R), while the convergent validity between ADCB-Q-2 and DBVS was 0.943 and $p \leq 0.001$, and between ADCB-Q-2 and PCL-R was 0.966 and $p \leq 0.001$, confirming the validity, efficacy, and efficiency of ADCB-Q-2 concerning both its structure and operation, in that for comparable items the comparison yielded an R = 0.999 with 99.9% equal value.

Limitations, implications for clinical practice, and prospects

In this validation analysis, the main limitation found concerns the co-item, which cannot be compared with the proposed tests, having different structures, and the analysis of the few common items would not have guaranteed the investigated result anyway; 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 instrument, as the overall total



score outcomes were in line with the expectations of all the proposed tests, divided by age group. Thus, through the use of the Perrotta–Marciano Questionnaire on the State of Awareness of One’s Deviant and Criminal Behavior (ADCB–Q–2), it was possible to concretely realize the clinical need to identify in the patient’s behavioral picture the behaviors that could fall within the criminal spectrum, i.e., deviant and antisocial and psychopathic behaviors. Prospects will be geared toward administering the new questionnaire, in its second edition, to a targeted population with specific clinical characteristics, to obtain data for evaluation at the diagnostic stage, with particular attention to the clinical nosographic picture.

Conclusion

Given the correctness of the definition of “criminal spectrum”, understood as a dysfunctional pattern consisting of a clinically relevant cross-sectional condition, in which the subject manifests deviant, borderline, histrionic, narcissistic, antisocial, and psychopathic behaviors, such that they foster their emotional, cognitive, and behavioral dysfunctionality in comparison with the conduct concerning social and legal norms that would be expected from another fellow member of their same environmental context, Perrotta–Marciano Questionnaire on the State of Awareness of One’s Deviant and Criminal Behavior (ADCB–Q–2) is a psychometric instrument with a well-defined and stable construct ($R = 0.999$; $p = \leq 0.001$), and positively correlated with the Deviant Behavior Variety Scale [DBVS] ($R = 0.943$) and the Hare Psychopathy Checklist–Revised [PCL–R] ($R = 0.966$).

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 regularly 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 the 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.

Acknowledgments

The authors who contributed to the work are 3. We report below the contribution of each author: GP was responsible for the design and execution (recruitment, data collection, statistical analysis) of the study; AM and DP supervised the

drafting of the manuscript and the processing of the sections and translations. Both authors have read and approved the final manuscript.

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