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Research Article

The Psychological Impact of Unresolved Childhood Trauma in a Pediatric Population

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Abstract

Introduction: Unresolved childhood traumas, throughout the human developmental stage, are capable of negatively affecting an individual's psychophysical growth, promoting the onset of psychopathological conditions. In the literature, the intrapsychic processes capable of explaining this phenomenon are not yet known, and the specific consequences are not known with certainty.

Method: The sample is composed of 44 Italian participants (16 males; 28 females), aged between 8 and 17 years (M: 12.9; SD: 3.1). By means of clinical interview and administration of the "Test of Separation Anxiety" (SAT), the "Perrotta Integrative Clinical Interviews", version C-3 (PICI-C-3) and the "Perrotta Human Emotions Questionnaire" (PHE-Q), pediatric patients included in the population sample were investigated.

Results: The data obtained from the research statistically showed significant differences ($p < 0.001$) between the clinical group and the control group, correlating pathological attachment style with a specific dysfunctional personality profile ($p < 0.001$), in the pediatric population studied.

Conclusions: Unresolved childhood trauma is a predisposing factor for the onset of a psychopathological disorder, capable of impacting both functioning and personality structure; however, other factors have also been identified that, if present facilitate or exacerbate the morbid condition, such as the duration of exposure to the trauma, the repetitiveness of the negative effects of the trauma, the depth of the suffering experienced, possible behavioral reinforcers, other traumatizing causes, such as psychophysical violence (with or without sexual intent), genetic and familial predisposition to certain psychopathologies, extreme economic poverty, adverse socio-environmental and cultural context, and difficulty of integration. Early psychotherapeutic intervention can promote functional recovery.

Key points:

Unresolved childhood traumas are factors that predispose the onset of psychopathologies, but require other contributing causes to exert their dysfunctional power.

Unresolved childhood traumas influence neuropsychological development from their onset.

Unresolved childhood trauma has a greater negative impact, regardless of age, if it is amplified or maintained by other predisposing or facilitating factors, such as education received, personal and family lifestyle, social environment, and genetic predisposition.

Sexual gender (male/female) does not play an important role in unprocessed childhood trauma, except to the extent of the sexual sphere, with a marked prevalence in the female population.

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Abbreviations

SAT: Separation Anxiety Test; PICI-C-3: Perrotta Integrative Clinical Interviews; PHE-Q: Perrotta Human Emotions Questionnaire; CG: Clinical group; Cg: Control group

Introduction

Background

The definition of "psychological trauma", shared by the majority of literature, is that offered by the French psychodynamic school of Pierre Janet, which identifies it as one or more events which, due to their intrinsic characteristics, can alter the subject's psychic system, threatening to fragmenting cohesion and mental stability, effectively generating what he defined as traumatic hysteria and which today is packaged in its severe form in post-traumatic stress disorder [1]. Ivan Pavlov, on the other hand, considered trauma only as an innate defensive reaction in response to environmental threats, which presented lasting psychophysical alterations over time and this position is shared by the writer [2], as psychological trauma is not capable of only to generate a stable and lasting disorder or even impact on the personality, unless this presents specific conditions: a) subjective severity of the trauma (the more serious it is perceived by the subject, the more it is able to invalidate individual psychophysical growth); b) onset at a young age (the more the trauma occurs in childhood, the more the emotional scars remain, especially unconscious ones); c) impact on the figures of reference (the more the trauma impacts on the figures of reference, because they are the cause or suffer the effects as in the case of an illness and/or a fatal event, the more the subject will perceive anguish); d) duration of the traumatic event (the more the trauma persists over time or is strengthened with repeated conduct, the more the trauma will exert its effects on the structural and functional elements of personality).

It can therefore be stated that the traumatic event, subjectively perceived, is represented by one or more events experienced by the subject as "critical, i.e., capable of generating anguish which manifests itself mainly in the form of impotence, anger, fear, sadness, and vulnerability, and capable of threatening the integrity of the person's psychophysical balance. The traumatic event, from a structural point of view, can be of any type: it can concern the loss of a loved one, as happens in a separation or during a death mourning, or even for the loss of chance in the conclusion of a professional service that was important for the subject, or even a serious illness or a violent event such as sexual violence or events with a strong psychological impact, as in the case of domestic and family violence, verbal violence and bullying) [3]. All these hypotheses, heterogeneous in their representation, are, however, characterized by a common element: essentially, the event modifies the subject's perception of well-being, making it more fragile and unstable, distorting its identity (in the most serious cases) and turning him into a "victim". Therefore, if the traumatic event is not processed correctly, this condition can become chronic over time, even rapidly, generating a real dysfunctional distortion in the subject, which may or may not also impact the stability of the personality [4].

Indeed, several studies published between 2014 and 2018 [5-8] have shown that traumas can be passed down from generation to generation, up to the third, according to the mechanism of heredity and this process seems to be hidden in "microRNA", which are genetic molecules that regulate the functioning of cells, organs and tissues. Trauma alters these "molecular directors," and the defect is transmitted to progeny through gametes; in summary, these are short sequences with which the instructions for building proteins are transmitted but which also preserve the memory of traumatic events. Finally, from a neuropsychological point of view, recent studies [9-12] have demonstrated that trauma can alter some structures (and consequence certain brain functions, especially in the areas of the prefrontal cortex, the anterior cingulate cortex, the amygdala, the anterior part of the frontal lobe, all areas that involve rational thinking, problem-solving, and personality expression in various activities, planning, empathy and moderation in social behavior. An interesting theory still to be explored also suggests the involvement of the cerebellum in experiences of inadequate attachment and dysfunctional coping style [13].

When the traumatic event intervenes in the early years of life or negatively impacts the role of the subject's reference figures because it is provoked by them or because they are victims of it, then the issue of childhood attachment comes into play. The author of the studies on "attachment theory, maternal bonding, and the consequences of deprivation of maternal care, is John Bowlby, who modified the current view that maternal bonding was based on hunger and nurture, according to a concept of interdependence [2,14]. Bowlby, through his studies, identified 5 specific stages [15]: a) I (0-3 months) or the pre-attachment, which consists of the implementation of spatial orientation (turning the head) and signaling behaviors (smiling, crying, leaving), by which the infant while recognizing the human figure when it appears in his field of vision does not specifically discriminate and recognize people; b) II (3-6 months) or the attachment information, in which the infant begins to distinguish between caring figures and occasional ones, showing this with increasingly obvious and marked behaviors (smiling); c) III (7-8 months) or anguish, in which he perceives this when a physical detachment from his caregiver figure is generated; d) IV (8-24 months) or true attachment, in which the true affective bond is created; e) V (over 24 months) or bond formation, in which the infant's exploration becomes constant, even in maintaining external. However, she was Mary Ainsworth, Bowlby's assistant, who made an important contribution by elaborating through the experimental situation called the "strange situation" the theory behind the Adult Attachment Interview, a psychometric instrument that can identify the 4 patterns of childhood attachment (secure, insecure-avoidant, insecure-ambivalent, disorganized-disoriented) and assess the different attachment behaviors of children in response to separation from their mother [16-23]. In particular [2,22-24], the following table, the details individual attachments (Table 1).

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Table 1: Details of the 4 individual attachments, according to Bowlby-Ainsworth theory.

Attachment type	Description
Type I: *Secure*	Children with this attachment style freely explore their surroundings, confident that the attachment figure will return if needed. They do not fear abandonment, can tolerate detachment, and tend to be joyful. As adults, they manage their emotions in a balanced way and trust each other easily. They are comfortable with emotional intimacy, both in giving and receiving affection. Therefore, they can maintain stable and satisfying relationships.
Type II: *Insecure-avoidant*	It occurs in children who are independent and never ask for help. Usually, they do not react when they are separated from the attachment figure or when they meet the figure again. They perceive detachment as something "predictable", tend to avoid relationships with others because of the belief of rejection, and are often sad. Even as adults, they avoid emotional intimacy. They are very resistant to letting go of loving relationships, minimizing their importance. They are reluctant to show their vulnerabilities and share their feelings. In relationships, they appear as autonomous and emotionally independent and avoid emotional closeness at all costs. In reality, they are afraid of intimacy and have great difficulties in facing and especially expressing their emotions, which are often repressed or minimized.
Type III: *Insecure-ambivalent*	Children with this attachment style tend to feel insecure about the emotional availability of the attachment figure. They often appear confused and are difficult to console. They are unable to endure prolonged detachments, lack confidence in their abilities but have confidence in those of others, believe they are not worthy of love, and suffer from abandonment anxiety. As adults, they need constant reassurance from their partner about feelings or relationship stability, are hypersensitive to signs of rejection, estrangement, or detachment, and tend to interpret them as a threat of abandonment. Therefore, they often and quickly enter emotional states of anxiety and worry.
Type IV: *Disorganized-disoriented*	Children with this attachment style exhibit contradictory behaviors concerning their attachment figure; for example, they simultaneously demand attention and comfort from their attachment figure and reject her. In response to separation, they throw themselves on the floor, show anxiety, cry desperately, avoid her gaze, or exhibit stereotypical behaviors such as spinning in circles. This attachment, at all ages, is characterized by contradictory, confused, and disorganized behaviors. In adult relationships, they manifest conflicting behaviors, such as sudden and unpredictable fluctuations between moments of intimacy and emotional detachment. When faced with certain situations, their emotional reactions are ambiguous. They have difficulties in emotion regulation and conflict management. This type of attachment often results from dysfunctional situations in the family or early traumatic experiences. Being aware of one's relationship dynamics can help identify, cope with, and improve any harmful attachment styles, consequently cultivating healthier and more satisfying relationships.

Studies in the field have shown a correlation between secure attachment and positive affectivity, with excellent problem-solving skills and self-confidence and better adjustment, especially in the early years of life [25]; conversely, insecure and disorganized patterns constitute a context of less developmental adaptation for the child, although there is little correlation between insecure attachment and psychopathological outcomes at preschool and school age, except for high psychosocial risk samples (extreme poverty, single parent, disrupted family context, psychogenic factors such as maternal depression and psychopathologies) that facilitate or predispose negatively [26]. On the point, several variables may affect dysfunctional patterns of personality, and therefore it is not easy to state with certainty the exact correlation, except to the extent of maladaptive characteristics such as peer/peer conflict, mood states, aggression and impulsivity [27,28]; other studies [29] associate maternal depression, associated with insecure-disorganized attachment, with hostile and externalizing behaviors in school age, while associated with insecure-avoidant attachment [30] would result in internalizing symptoms. In adults, however, studies would correlate ambivalent attachment with anxiety disorders [31] while disorganized attachment with psychotic symptoms [32-34], according to the international nosography of the Diagnostic and Statistical Manual of mental disorders - DSM-5-TR [35], which distinguishes psychopathological forms at all developmental stages [2,36-41].

The concepts of "facilitating factor" and "predisposing factor" in psychopathology, in the literature, are not unambiguous, and classifications in this regard are more indicative than exhaustive. This is also why, to date, it is challenging to state that a specific trauma or a specific dysfunctional attachment can always lead to a specific psychopathological disorder, as these other factors, under consideration here, may play a specific and not yet clear role [2,42,43]. Several authors have tried their hand at defining these 2 concepts, and for simplicity, in the following table (Table 2), they are given in schematic form; the theoretical basis of the present study is based on them.

Aim

A study was conducted, with a small sample, to test whether there could be a correlation between the presence of specific childhood trauma, with or without dysfunctional attachment, and one or more psychopathological personality tendencies, in the pediatric population investigated (primary outcome), and whether there may be a correlation between childhood trauma not properly processed and emotional intelligence (secondary outcome). The purpose of the present discussion is to try to determine whether, in the present state of scientific knowledge, it is possible to argue that certain unprocessed trauma factors can interfere with the healthy psychophysical development of the subject, up to and including true psychopathological forms.

Materials and methods

Study design

Investigation of personality profile, using the Perrotta Integrative Clinical Interviews (PICI-3) and the "Perrotta Human Emotions Questionnaire" (PHE-Q) to investigate emotional intelligence, compared with the Separation Anxiety Test (SAT) and clinical interview outcomes, investigating possible predisposing and facilitating factors.

Materials and methods

The author searched PubMed from January 2005 to March 2024 for systematic reviews, meta-analyses, clinical trials, and randomized controlled trials, using "attachment style AND trauma", selecting 35 eligibility results. To have a greater and complete overview of the topic, ultimately selecting a total of

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Table 2: Types of predisposing and facilitating factors for psychopathologies, with description and indicative list (examples).

Types of factors	Description	Indicative list (factor classification)
Predisposing factors	They are factors that can predispose the subject to a particular behavior, as they can influence neuropsychological maturation [50-52].	1. Personal psychopathological genetics (individual factor) 2. Familial psychopathological genetics (family factor) 3. Low level of emotional intelligence (individual factor) 4. Repeated psychophysical abuse in childhood, which was not properly processed (individual factor) 5. Family abandonment (individual factor) 6. Family distress (family factor) 7. Dysfunctional family emotional-sentimental relationships (family factor) 8. Unhealthy/deviant/criminal social environment (social factor) 9. Marked inequality and discrimination (socio-cultural factor) 10. Companionships of peers/adults prone to deviant/criminal tendencies (social factor)
Facilitating factors	They are factors that can facilitate a particular behavior if reinforced adequately and consistently, as they can influence the behavioral profile [53-55].	1. Single psychophysical abuse in developmental age and not properly processed (individual factor) 2. Early involvement in antisocial behavior (individual factor) 3. Absence of positive educational role models (family factor) 4. Personal/family status of economic poverty or excessive deprivation (social factor) 5. Excessively austere/rigid/detached upbringing/discipline in childhood (family factor) 6. Low schooling or attending schools in bad environments or a lack of educational opportunities (social factor) 7. Exposure in the presence of or via the internet to deviant/criminal, violent, or markedly sexual behavior (social factor) 8. Negative influence through mass media of movies or music with markedly deviant/criminal tendencies (e.g., trap music, hard metal,...) (cultural factor)

9 studies, still adding 47 more reviews to be able to argue the elaborated content (to more easily contextualize definitions and clinical-diagnostic profiles), for an overall total of 56 results. Simple reviews, opinion contributions, or publications 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).

The present research is marked by the method of clinical analysis by direct interview (to obtain the history and personal history) and administration of 3 questionnaires: the "Separation Anxiety Test" (SAT), the "Perrotta Integrative Clinical Interviews", version C-3 (PICI-C-3), and the "Perrotta Human Emotions Questionnaire" (PHE-Q). Specifically: a) the SAT studies one's pattern of attachment in a developmental population by administering 12 tablets, in about 30 minutes [44]; b) the PICI-C-3 studies functional and dysfunctional personality traits in the pediatric population aged 8 to 17 years, using a battery of integrated questionnaires, according to a specific model, with administration in about 45 minutes [45]; c) the PHE-Q investigates subjective emotional intelligence in 78 items, with multiple responses, to evaluate the perceptual-emotional state, emotional understanding, emotional representation, emotional management and emotional relationship [46]. The questionnaires used are all validated, as reported in the references.

Setting and participants

The selected population was divided into 2 groups: the first (clinical group, CG) and the second (control group, CG).

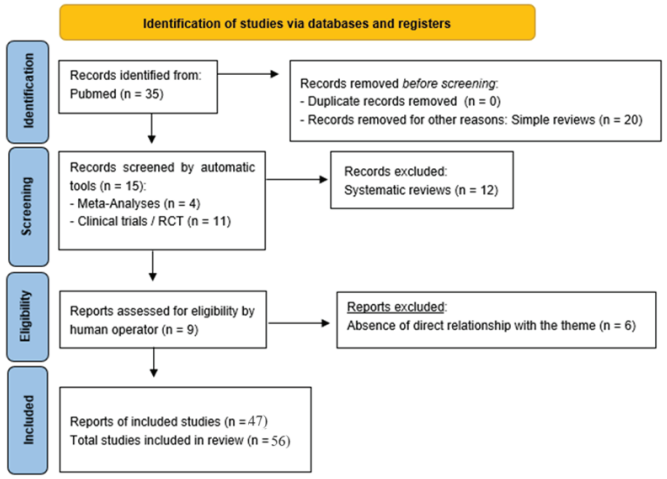

Figure 1: PRISMA flow diagram template for systematic reviews. Matthew J Page et al. BMJ 2021; 372:bmj.n71.

Inclusive criteria for CG are: 1) Age 8-17 years old; 2) Italian nationality or citizenship for at least 2 generations; and 3) narrative of one or more unresolved youthful traumatic experiences (occurring by the time they reached the age of majority, 18 years old). Exclusive criteria for CG are: 1) Age < 8 years and ≥ 18 years old; 2) foreign nationality or Italian nationality for less than 2 generations; 3) Absence of unresolved youth traumatic experiences. The sample of the CG is 44 units. All individuals with the same characteristics but with the absence of youthful traumatic experiences, regardless of their resolution, were included in the CG. For organizational

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reasons, Cg's sample is also 44 units, comparable to each other in age and gender (Figure 2).

Taking into account the 2020-2022 pandemic period and the different geographical residences of the patients, it was preferred to carry out the clinical interview and administration of the questionnaires via the online video calling platforms Skype and WhatsApp. This research work was conducted from June 2021 to February 2024. As per the informed consent and data processing, all participants were guaranteed anonymity, and compliance with the ethical requirements of the Declaration of Helsinki. It was not necessary to request an opinion from the local Ethics Committee as the patients come from a private catchment area and the data are retrospective. The research is unfunded and free from conflicts of interest. The sample of the selected population is composed of 44 participants (16/males, 28/females) per group in equal measure, to carry out statistical case-controls, aged between 8 and 17 years (M: 12.9; SD: 3.1) for the entire study. The drop-out rate was 0/88 (0.0%) (Table 3).

Results

Once the population sample was selected and the subjects selected in both groups were standardized to guarantee the subsequent statistical analysis of the case controls, matched by age and sexual gender, the clinical interviews were carried out to compile the medical history and the patient card with the information necessary to be able to compare the data with the results of the questionnaires.

During the clinical interview, the therapist took note of the personal and family clinical history, sexual gender, age, type of childhood trauma not processed correctly (not treated in psychotherapy or through psychopharmacological administration), the presence of an addiction to substances or behaviour, the presence of inappropriate sexual behaviour, aggression, impulsivity, hyperactivity, distractibility, educational difficulties and socio-relational difficulties (Table 4), correlating them individually and in a series of multiple regressions with the data of the 3 questionnaires, the SAT for attachment, the PICI-C-3 for identifying the dysfunctional personality profile and the PHEQ to study emotional intelligence. In the following table, the descriptive details of possible childhood traumas are not processed correctly. It was not possible to integrate the study with health data on the genetic investigation, as none of the selected subjects had this information available.

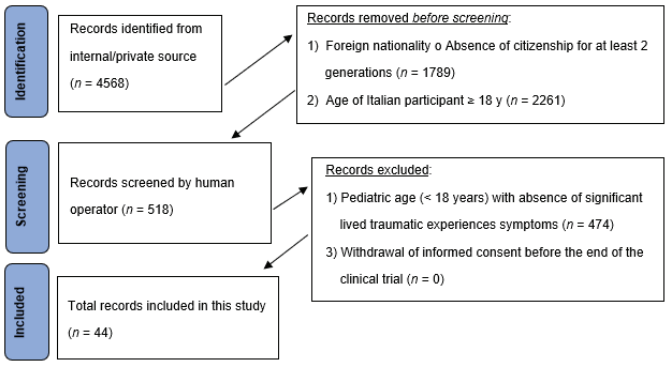

Figure 2: Clinical population sample selection criteria.

Table 3: Population sample (number by individual group) .

Age	Male (%)	Female (%)	Total
8-9	4 (25.0%)	6 (21.4%)	10 (22.7%)
10-11	2 (12.5%)	3 (10.7%)	5 (11.4%)
12-13	3 (18.8%)	4 (14.3%)	7 (15.9%)
14-15	5 (31.2%)	6 (21.4%)	11 (25.0%)
16-17	2 (12.5%)	9 (32.2%)	11 (25.0%)
Total	16 (36.4%)	28 (63.6%)	44 (100.0%)

By re-elaborating these values and choosing the variables, according to a grouping logic, it emerges that age, alone, is not in itself a greater or lesser risk factor but the dysfunctional weight could be determined by the impact of other factors or other conditions, such as the duration of exposure to the trauma, the repetitiveness of the negative effects of the trauma, the depth of suffering suffered following the traumatizing event, any behavioral reinforcements and the presence of traumatizing contributory causes (Figure 3).

The non-parametric statistical analysis performed (Chi-square or χ^2) shows a clear significance ($p < 0.05$) on all tested variables, excluding gender ($p = 1.000$), age ($p = 1.000$), addictions, dysfunctional neurotic personality ($p = 0.379$) and in the average ($p = 0.218$) and above average ($p = 0.743$) forms of emotional intelligence, between the clinical and control groups (Table 5).

By carrying out the ANOVA statistical analysis, 3 different regression models are obtained with different degrees of robustness, if the variables with the highest significance (nos. 3, 16, 17, 18, 19, 20, 21, 22 and 23) are compared with the 3 variables referring to the 3 psychometric tests used in the research (n. 24 for the SAT, n. 29 for the PICI-C-3 and n. 34 for the PHEQ), keeping the collinearity (VIF) lower than 5.0. In the first case, we obtain a model that has an R-squared adjusted to 0.672 and $p = 0.000$, in the second case we obtain 0.452 with $p = 0.000$, and in the third case 0.069 with $p = 0.099$ (Table 6).

By carrying out the statistical analysis T-test for paired data, the statistical significance between CG and Cg is confirmed, comparing the patients by pairing the data by age (8-17 years) and sexual gender (male/female), with correlation values that are all higher than 0.500 (Table 7).

Discussion

The present research is trying, primarily, to answer the question of whether or not there is a possible correlation between the presence of specific unprocessed childhood traumas, with or without dysfunctional attachment, and one or more psychopathological tendencies of the personality, in the pediatric population investigated, and secondly, whether there is a possible correlation between the existence of traumas not processed correctly and subjective emotional intelligence. To answer these questions and satisfy the purpose

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Table 4: List of analyzed variables.

N	Type_variable	Description	Statistical analysis of frequencies			
			Male		Female	
			CG	Cg	CG	Cg
1	Gender	Defined male/female sexual gender	16/44	16/44	28/44	28/44
2	Age	Age range on an annual basis	8-17y	8-17y	8-17y	8-17y
3	Childhood trauma: psychological domestic violence	Intrafamily trauma of a non-sexual and non-violent psychological nature is capable of harming the subjective perception	4	4	0	0
4	Childhood trauma: physical domestic violence	Intrafamily trauma of a non-sexual psychological nature, but with the use of physical violence, is capable of negatively impacting the subjective perception	4	3	0	0
5	Childhood trauma: sexual domestic violence	Intrafamily trauma of a psychological nature with more or less violent sexual impact, capable of harming the subjective perception	4	4	0	0
6	Childhood trauma: mixed domestic violence (no_sex)	Intrafamily trauma of a psychological and physical nature, but not sexual, and capable of negatively impacting the subjective perception	4	9	0	0
7	Childhood trauma: mixed domestic violence (yes_sex)	Intrafamily trauma of a psychological and physical nature, with sexual connotations, and capable of harming the subjective perception	4	9	0	0
8	Childhood trauma: family psychopathology	Full-blown diagnosis of a psychopathological disorder of at least one parent or stable use of psychotropic drugs, even in the absence of a diagnosis	7	6	0	0
9	Childhood trauma: extreme poverty	The economic status of poverty, with a maximum monthly income not exceeding, on average, the total income of 400 euros	4	5	0	0
10	Childhood trauma: unfavorable socio-environmental context	Residence or domicile in poor, infamous, or degraded contexts, with an average higher rate of deviance and crime	5	4	0	0
11	Childhood trauma: unfavorable school context	Negative circumstances relating to the school context (difficulty studying, conflicting relationships with peers, bullying, direct conflict with one or more teachers)	9	11	0	3
12	Childhood trauma: Mixed abuse	Cumulative trauma of mixed nature	10	10	0	0
13	Substance addiction	Non-occasional use of narcotic or alcoholic substances to achieve pleasure, even in the absence of full-blown drug addiction	2	3	4	4
14	Behavioral addiction	The tendency towards behavioral addiction (video games, compulsive shopping, gambling, internet and technologies, sports, sex), even in the absence of a clear diagnosis	2	9	2	5
15	Mixed addiction	Cumulative dependency hypotheses	8	16	1	1
16	Inappropriate sexual behavior	Behaviors with a sexualized character, more or less intentional (compulsive masturbation, paraphilias, sexual addiction)	8	15	3	9
17	Aggression /explosive conduct	Unjustified aggressive or explosive conduct	10	19	3	9
18	Impulsiveness	Impulsive attacks on evaluations that deserve more attention and time, in the absence of overt aggression	11	18	4	4
19	Hyperactivity	Hyperactive, frenetic, and/or maniacal attacks, in the absence of justifying circumstances	10	18	1	2
20	Easily distractible	Intrusive, repetitive, and obsessive thoughts that negatively affect the attention threshold, in activities that require this cognitive ability	11	17	3	5
21	Educational-scholastic difficulties	Negative events in the educational-scholastic context, of a mixed and non-specific nature (perception of anguish in the presence of a question, perception of stress about school events, ...)	16	28	2	5
22	Socio-environmental and relational difficulties	Negative events in the reference environmental context, of mixed and non-specific nature (tensions between neighbors or friends of the same group, relational problems with friends and partners, ...)	16	28	3	4
23	Secure attachment style	Adaptive subjects, capable of maintaining the balance between internal and external parts	0	0	9	19
24	Insecure-avoidant attachment style	Maladaptive subjects are unable to maintain the balance between internal and external parts because they are insecure, fearful, or excessively sensitive. Neurotic tendency	6	7	7	9
25	Insecure-ambivalent attachment style	Maladaptive subjects are unable to maintain balance between the internal and external parts because they are confused and fragile, hypersensitive, and need continuous attention and reassurance. Dramatic trend.	5	12	0	0
26	Disoriented-disorganized attachment style	Maladaptive subjects, unable to maintain the balance between internal and external parts because their fragility exposes them to internal fragmentation, suspicious and disoriented, organize their actions based on negative emotions and conflicting circumstances. Psychotic tendency	5	9	0	0
27	Functional personality	Absence of overt psychopathologies	0	0	6	11
28	Dysfunctional neurotic personality	Neurotic personality tendency	5	9	7	12
		(cluster C-DSM5 or A-PICI3)				
29	Dramatic dysfunctional personality	Dramatic personality tendency	6	14	3	5
		(B-DSM5 or B-PICI3 cluster)				
30	Dysfunctional psychotic personality	Psychotic personality tendency	5	5	0	0
		(cluster A-DSM5 or C-PICI3)				

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31	Emotional intelligence (EI): below average	Evaluation of the cognitive profile of the subject based on his emotional intelligence: values below the statistical average	16	14	28	21
32	Emotional intelligence (EI): average	Evaluation of the cognitive profile of the subject based on his emotional intelligence: values in the statistical average	0	2	0	6
33	Emotional intelligence (EI): above average	Evaluation of the cognitive profile of the subject based on his emotional intelligence: values above the statistical average	0	0	0	1

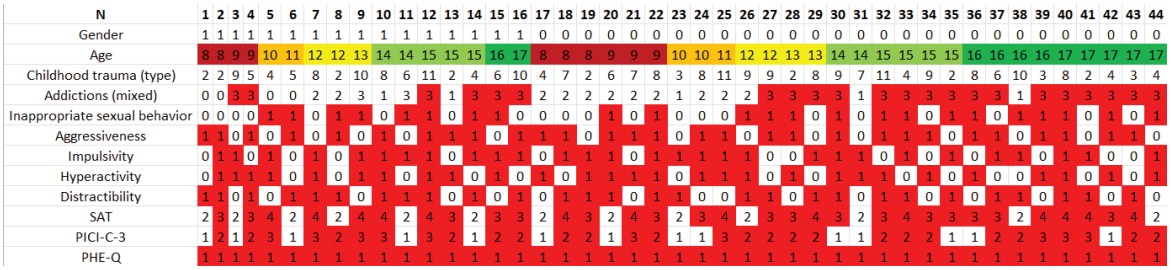

Figure 3: The effect of the "age" variable concerning the other grouped variables. Red (8-9y), orange (10-11y), yellow (12-13y), light green (14-15y), dark green (16-17y). The values colored in light red are those that have a greater negative impact than others, due to their severity.

Table 5: Non-parametric statistical analysis (Pearson Chi-square).

N	Type_variable	p
1	Gender	1.000
2	Age	1.000
3	Childhood trauma (types)	0.001
4	Childhood trauma: psychological domestic violence	0.006
5	Childhood trauma: physical domestic violence	0.012
6	Childhood trauma: sexual domestic violence	0.012
7	Childhood trauma: mixed domestic violence (no_sex)	0.000
8	Childhood trauma: mixed domestic violence (yes_sex)	0.000
9	Childhood trauma: family psychopathology	0.000
10	Childhood trauma: extreme poverty	0.002
11	Childhood trauma: unfavorable socio-environmental context	0.002
12	Childhood trauma: unfavorable school context	0.000
13	Childhood trauma: Mixed abuse	0.000
14	Substance addiction	0.326
15	Behavioral addiction	0.627
16	Mixed addiction	0.024
17	Inappropriate sexual behavior	0.029
18	Aggression /explosive conduct	0.001
19	Impulsiveness	0.000
20	Hyperactivity	0.000
21	Easily distractible	0.000
22	Educational-scholastic difficulties	0.000
23	Socio-environmental and relational difficulties	0.000
24	SAT_attachment style (total)	0.000
25	Secure attachment style	0.000
26	Insecure-avoidant attachment style	0.005
27	Insecure-ambivalent attachment style	0.000
28	Disoriented-disorganized attachment style	0.000
29	PICI-C-3_personality (total)	0.000
30	Functional personality	0.000
31	Dysfunctional neurotic personality	0.379
32	Dramatic dysfunctional personality	0.011
33	Dysfunctional psychotic personality	0.001
34	PHEQ_EI (total)	0.042
35	Emotional intelligence (EI): below average	0.003
36	Emotional intelligence (EI): average	0.218
37	Emotional intelligence (EI): above average	0.743

Table 6: ANOVA statistical analysis (regression models).

N_ model	Dependent variable	Independent variables	Adapted R-square	p
1	SAT_attachment style (total) (n. 24)	3, 16, 17, 18, 19, 20, 21, 22, and 23	0.672	0.000
2	PICI-C-3_personality (total) (n. 29)	3, 16, 17, 18, 19, 20, 21, 22, and 23	0.452	0.000
3	PHEQ_EI (total) (n. 34)	3, 16, 17, 18, 19, 20, 21, 22 e 23	0.069	0.099

of the research (to determine whether, in the current state of scientific knowledge, it is possible to maintain that some unprocessed traumatic factors are capable of interfering with the healthy psychophysical development of the subject, to the point of arriving at real own psychopathological pathologies) 2 groups were compared, one clinical and one control, and the research data were analyzed using statistics, which revealed significantly more alarming results than recent studies on the subject [46-49].

The first statistical confirmation is related to the frequency of comparisons between the two groups and about sexual gender. From here, it emerges that there are significant differences between the two groups, which reflect the general tendency of the data to represent a marked dysfunctionality following the presence of a childhood trauma not processed correctly, but also that these differences weaken (but do not disappear) when comparing clinical patients with control patients in certain variables. 11, 13, 14, 18, 20, 21, and 22, demonstrating that childhood trauma not processed correctly may not be the only cause of psychological dysfunction in developmental age; this conclusion is more evident with variable n. 16 in the female control group, where the score is even higher than that of the

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Table 7: Paired T-test, statistical analysis.

N_couple	Pairings	Correlation	*p*
1	@1 & @45	0.589	0.000
2	@2 & @46	0.548	0.001
3	@3 & @47	0.527	0.011
4	@4 & @48	0.536	0.001
5	@5 & @49	0.615	0.000
6	@6 & @50	0.659	0.000
7	@7 & @51	0.648	0.000
8	@8 & @52	0.782	0.000
9	@9 & @53	0.632	0.000
10	@10 & @54	0.721	0.000
11	@11 & @55	0.778	0.000
12	@12 & @56	0.695	0.000
13	@13 & @57	0.831	0.000
14	@14 & @58	0.813	0.000
15	@15 & @59	0.816	0.000
16	@16 & @60	0.767	0.000
17	@17 & @61	0.768	0.000
18	@18 & @62	0.641	0.000
19	@19 & @63	0.763	0.000
20	@20 & @64	0.723	0.000
21	@21 & @65	0.658	0.000
22	@22 & @66	0.662	0.000
23	@23 & @67	0.834	0.000
24	@24 & @68	0.714	0.000
25	@25 & @69	0.658	0.000
26	@26 & @70	0.756	0.000
27	@27 & @71	0.756	0.000
28	@28 & @72	0.861	0.000
29	@29 & @73	0.769	0.000
30	@30 & @74	0.803	0.000
31	@31 & @75	0.842	0.000
32	@32 & @76	0.768	0.000
33	@33 & @77	0.866	0.000
34	@34 & @78	0.805	0.000
35	@35 & @79	0.895	0.000
36	@36 & @80	0.854	0.000
37	@37 & @81	0.887	0.000
38	@38 & @82	0.826	0.000
39	@39 & @83	0.896	0.000
40	@40 & @84	0.847	0.000
41	@41 & @85	0.895	0.000
42	@42 & @86	0.898	0.000
43	@43 & @87	0.897	0.000
44	@44 & @88	0.913	0.000

male (but not female) clinical group, which appears to be the highest among all, demonstrating that sexual behaviors in women could be more easily influenced by trauma than by men. Regarding attachment style, the general trend shows that an incorrectly processed childhood trauma can influence the style, but also that the insecure-avoidant style may not necessarily be the consequence of a consciously present childhood trauma. About the dysfunctional personality profile, the data confirm that the presence of childhood trauma not processed correctly is always correlated with a psychopathological personality profile, but may not be the only cause of this tendency, as in the control group there are still There are subjects who, despite not narrating traumatic childhood episodes that have not been processed correctly, have a dysfunctional profile that tends to be more neurotic and dramatic, while in the clinical group, there is a significant tendency towards dramatic and psychotic profiles. Finally, about emotional intelligence, the data collected show a truly alarming situation: almost all of the population sample (80/88, 91%), both clinical and control, presents levels lower than average, and only one a minimal part (9/88, 9%) has average or slightly higher values, confirming that it is not only childhood trauma that is not processed correctly that is the cause of a low level of emotional intelligence but there are other factors capable of generate this distortion, such as the education received, educational stimuli, maturation prospects, one's neuropsychological inclinations and an adequate socio-family environment. No significant difference, however, emerges about the age of onset of the traumatic event, probably because it is not only age in itself that matters but other circumstances, such as the duration of exposure to the trauma, the repetitiveness of the negative effects of the trauma, the depth of suffering suffered following the traumatizing event, any behavioral reinforcements that have occurred over time and the presence of other traumatizing causes. Data was perfectly confirmed also by the statistical findings relating to case controls.

The second statistical finding is related to the non-parametric comparisons, which confirm what has been said so far, especially about gender, age, addictions, dysfunctional neurotic personality, and average and above-average forms of emotional intelligence. In particular, variables n. 14, 15, 31, 36, and 37 could be influenced not only by childhood trauma not being processed correctly but also by other factors that would act as contributing causes, such as educational style, behavioral reinforcement, socio-environmental stimuli, and subjective neuropsychological tendencies.

The third statistical finding is related to the regression models, which, on certain indicators, demonstrate that childhood trauma not processed correctly impacts the attachment style and personality profile, but in a weaker manner on emotional intelligence (which only seems to be conditioned but not predisposed in a pejorative sense).

In conclusion, it, therefore, appears completely clear that childhood trauma that is not processed correctly can be considered a factor that predisposes to the onset of a psychopathological personality disorder, but alone it is not

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capable of completing the dysfunctional operation, and for this requires other factors, predisposing and/or facilitating, such as the duration of exposure to the trauma, the repetitiveness of the negative effects of the trauma, the depth of the suffering suffered following the traumatizing event, any behavioral reinforcements that have occurred over time and the presence of other traumatizing causes such as psychophysical violence (with or without sexual intent), genetic predisposition and familiarity with certain psychopathologies, extreme economic poverty, the unfavorable socio-environmental and cultural context and difficulties in settling in.

For these reasons, a correct psychotherapeutic approach to childhood trauma that is not processed correctly, right from the first symptomatic manifestations, can favor the functional recovery of the patient, disinvesting in the chronification of the problem before it is able, in the presence of other contributing causes, to become a toxic splinter for the internal stability of the subject [56].

Limitations and prospects

This research work presents some limitations in the study design, which could partially affect the results. In particular, the genetic and familial predisposition of psychopathologies is not taken into account, as the data in possession are not complete from this specific investigation, and therefore, the type of study is retrospective. Furthermore, the population sample is small and therefore needs to be expanded to confirm the results, which, however, appear interesting, especially about the need for early psychotherapeutic intervention in the presence of childhood trauma and the central role of socio-environmental education and culture to avoid harming the personality profile. This first work serves to lay the foundations for a more in-depth investigation, based on the stimuli already found. Future studies will be focused on more widespread data collection, on the expansion of the quantitative sample of the population to be selected, and on the specific dysfunctional weight of the individual, which predisposes and favors psychopathology.

Conclusion

Unresolved childhood trauma can be considered a factor that predisposes to the onset of a psychopathological personality disorder, but alone it is not able to complete the dysfunctional operation, as it requires other predisposing and/or facilitating factors, such as duration of exposure to the trauma, the repetitiveness of the negative effects of the trauma, the depth of suffering suffered following the traumatizing event, any behavioral reinforcements that have occurred over time and the presence of other traumatizing causes, such as psychophysical violence (with or without sexual purpose), genetic predisposition and familiarity with some psychopathologies, extreme economic poverty, the unfavorable socio-environmental and cultural context and difficulties in settling in. A correct psychotherapeutic approach to childhood trauma, right from the first symptomatic manifestations, can promote functional recovery before the problem becomes chronic.

Ethics approval and consent to partecipate

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 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 before the start of this study and is part of a private and non-public database.

CoNot sent 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 be the sole examiner during the therapeutic sessions and that all other authors be aware of the participants' 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' contribution

Giulio Perrotta designed, developed, and validated the questionnaire and drafted the manuscript. Stefano Eleuteri supervised the manuscript and statistical analysis.

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