

PARENTAL NEGLECT AND THE RISK OF POSTTRAUMATIC STRESS IN YOUTH NEGLIJENȚA PARENTALĂ ȘI RISCUL DE STRES POSTTRAUMATIC LA TINERI

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Abstract

Parental neglect is a form of maltreatment that can have significant consequences on the psychological development of the child. Unlike active abuse, which involves acts of direct violence, neglect operates by omission, often being more difficult to identify, having equally devastating psychological effects. According to attachment theory, the absence of parents supports the formation of an unstable cohesion, predisposing the child to difficulties in emotional regulation and increased reactivity to stress. The lack of a predictable and protected environment leads to emotional disorders, favoring the development of maladaptive beliefs about oneself and the world, amplifying the feeling of insecurity and constant fear of danger. On an emotional level, chronic neglect often generates a high level of toxic stress, being conceptualized as an attachment trauma or a complex relational trauma with cumulative effects.

Keywords: parental neglect, psychotrauma, attachment, anxiety, stress.

Rezumat

În acest studiu se propune analiza literaturii asupra psihotraumei în urma neglijenței parentale care poate lăsa sechele semnificative asupra dezvoltării psiho-emoționale la vârsta tinereții. Spre deosebire de abuzul activ, care implică acte de violență directă, neglijarea operează prin omisiune, fiind adesea mai greu de identificat, având efecte psihologice la fel de devastatoare. Conform teoriei atașamentului, absența părinților susține formarea unei coeziuni instabile, predispunând copilul la dificultăți de reglare emoțională și la o reactivitate crescută la stres. Lipsa unui mediu prielnic și protejat duce la dereglări emoționale, favorizând dezvoltarea convingerilor dezadaptative despre sine și lume, amplificând sentimentul de insecuritate și teama constantă de pericol. La nivel emoțional, neglijarea cronică generează adesea un nivel ridicat de anxietate, stres toxic, fiind conceptualizată drept o traumă de atașament sau o traumă relațională complexă cu efecte cumulative.

Cuvinte-cheie: neglijență parentală, psihotraumă, atașament, anxietate, stres.

Introduction. The scientific approach to psychotrauma began to take shape only in the 19th century, its evolution being influenced by major historical events, particularly after World War II, and by advancements in the fields of psychiatry

and psychology. Soldiers returning from the front exhibited severe symptoms such as chronic anxiety, flashbacks, insomnia, and difficulties reintegrating into civilian life. This condition was termed "war neurosis" or "shell shock." Post-Traumatic Stress Disorder (PTSD) was officially recognized as a distinct diagnostic entity in 1980, although post-traumatic symptoms had been described throughout history. Starting in 1980, in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) (American Psychiatric Association, 1980), symptoms were described under the name Post-Traumatic Stress Disorder (PTSD) and Acute Stress Disorder. Post-Traumatic Stress Disorder (PTSD) in DSM-III was defined as exposure to an event involving ,threat to life or physical integrity', followed by intrusive symptoms, avoidance, and hyperarousal. [5]

Charcot Jean-Martin (1825-1893), a French neurologist, was the first to associate the symptoms of hysteria with severe emotional trauma, arguing that they were the result of psychological shocks. He defined psychological trauma as an ,emotional shock' that disrupts the normal functioning of the mind, leading to physical and psychological symptoms. Sigmund Freud (1920) developed the understanding of psycho-trauma and defined psychological trauma as an unresolved internal conflict stemming from the ego's inability to manage overwhelming external stimuli.[2]

Cognitive-behavioral theory (CBT) focuses on how negative thoughts and beliefs about oneself and the surrounding world contribute to the maintenance of post-traumatic symptoms. This approach argues that individuals who have experienced psychological trauma develop distorted beliefs about the world (for example, ,The world is a dangerous place' or ,I am incapable of coping'), which perpetuate anxiety and avoidance.[4]

The purpose of this study is to analyze the specialized literature dedicated to post-traumatic stress disorders arising from childhood due to parental neglect and the risk of developing post-traumatic stress in young people.

Conceptualizing psychological trauma. Recent studies consider that psychological trauma is a consequence of the excessive psychological shock suffered by a person at the time of a catastrophic event. It can occur following: the loss of loved ones or the loss of major assets for the subject (home, job); high intensity stress following crisis situations (war, natural disasters, earthquakes, traffic accidents), physical and sexual violence.[12, p. 20]

German psychologists Fischer G. and Riedesser P. define psychological trauma as a vital experience of discrepancy between threatening situational factors and individual coping abilities, which is accompanied by feelings of helplessness and abandonment, defenselessness, and thus leads to a lasting collapse of self-understanding and understanding of the world. Due to excessive stress, fear, suffering, and other negative influences, a person is unable to either actively fight to overcome this situation or to avoid it, but internally, the struggle for survival continues.[6]

An incredible reserve of forces is being mobilized. Our perception changes as we find ourselves in a new, seemingly impossible situation. Many people experience a sense of unreality regarding this. Children and adults who have experienced a traumatic or sad event face difficulties in returning to their previously established lives, fearing misunderstandings and persistently avoiding talking about the tragic event. A mental gap appears. On one hand, a person continues to be in the familiar, everyday world, but on the other hand, they experience a sense of unreality about what is happening. An obsessive thought emerges that everything could fall apart and could cause serious experiences again, including inexplicable anxiety, fear, and helplessness. People with psychological traumas usually suffer from symptoms of fear, anxiety, panic attacks, and even phobias against the backdrop of developing interpersonal relationships with others.[12]



This increase in the prevalence of post-traumatic disorders is not only a medical concern but also a psychosocial one, as the impact of these conditions goes beyond individual symptoms, affecting young people's ability to engage, academic performance, and interpersonal relationships. In the context of these disorders, young people often face challenges in adapting to work environments, maintaining stable relationships with partners, and managing daily responsibilities.[10]

Almost every one of us experienced a feeling of acute fear in childhood related to a phenomenon, event, or person. A drunken stranger, a stuck elevator, lost house keys, separation from parents for a long period of time, or the loss of parents, the hyper-critical attitude of a parent towards a child, etc. Some of these situations have been safely forgotten by us, went unnoticed, while we can remember others even in adulthood. Children's memory is flexible and represses these negative events and incidents. However, a repressed memory can live in the deep layers of consciousness and one day may resurface, bringing with it serious consequences. Early childhood traumas, even if forgotten, can have a significant impact on our adult lives. On a personal level, young people who have suffered from childhood traumatic stress often experience a wide range of emotional and behavioral difficulties, including social isolation, trouble in establishing and maintaining relationships, and a decrease in self-esteem. These problems, often amplified by post-traumatic symptoms, can lead to a vicious cycle in which young people withdraw from social activities and relationships, thereby exacerbating feelings of isolation and misunderstanding. The relationship between childhood trauma and adult psychopathology is complex, with the type, severity, and chronicity of the trauma all playing a significant role. Prospective studies have found that exposure to physical abuse, sexual abuse, and multiple types of childhood trauma can significantly increase the risk of developing major depression and other mental health issues in adulthood.[14]

It is also observed that many of the incarcerated individuals, in particular, have been found to have had childhood traumas, as well as trauma in early adulthood. Those who report mental health issues (severe depression, psychopathy) have in their medical history experienced trauma throughout their lives. These findings underscore the importance of trauma-informed care and interventions aimed at addressing the underlying causes of maladaptive behaviors and psychopathology in populations that have suffered significant adversities.

Trauma in critical periods of development can disrupt normative attachment, emotional regulation, and self-concept, leading to the emergence of dysfunctional personality traits and personality disorders.[11]

One of the factors that can trigger psychological trauma is child neglect, concerning his needs from early childhood. This involves the neglect by parents or guardians in fulfilling a child's fundamental emotional and physical needs in a way that can negatively affect their growth and psycho-emotional development. In the explanatory dictionary, neglect is interpreted as a lack of care for someone or something, not giving due attention; to overlook, to set aside, to omit. Not taking care of one's own self. Definitions in specialized literature emphasize the privative nature of neglect: ,,a child's ignorance is characterized by a lack of attention, responsibility, and appropriate age and needs protection"[13]. This can manifest in various forms: physical neglect, medical neglect, educational neglect, or emotional neglect. All of these options share a common point: the persistent inability of parents to provide the care and essential interaction necessary for the healthy development of the child. Neglect is often referred to as abuse by omission and, although it does not produce visible signs immediately, like physical abuse, it can generate effects that are just as severe or even more devastating over time.[9].

WALKER P. defines parental negligence as ,, any action or inaction on the part of a parent or caregiver, which produces a potential harm to the health, survival, development, or dignity of the child," explicitly including neglect. Neglect also occurs when the parent does not provide comfort, affection, attention, or support that the child initiates. The needs of the child are in accordance with their age: an infant needs nourishment and comfort, a preschooler needs nourishment and play. a school-aged child needs support and education. Neglect is essentially a failure to provide what is normally necessary for the child at their level of development [13].

Mechanism of formation and mani**festation of trauma.** Psychic trauma is not a disease, but a deviation from the norm, a dysregulation. It cannot be diagnosed either through laboratory tests or with the most advanced devices. Some specialists in the field confirm that following mental trauma there is a stagnation in the child's development or a change in the emotional or behavioral sphere of the adolescent or adult. The cause of psychological trauma is not the event itself, which caused a strong shock, but the inability of the subject to cope with it and its consequences. A traumatic situation occurs when a person is unable to manage their feelings and the stress level exceeds their emotional regulation capabilities. Trauma has the property of accumulating. Once it has accumulated a certain critical amount, trauma can affect the psyche and the body.

Most often, psychological trauma occurs in childhood, because the child, due to the age and the characteristics of the developing psyche, cannot cope with the emotions of shock If parents/adults are not able to provide adequate support and allow them to express their emotions in a timely manner, then the experiences remain inside the child. If parents helped them cope with difficult situations, then in adulthood the child independently controls his emotions. If parents helped them cope with difficult situations, then in adulthood the child independently controls his emotions.

Childhood traumas in adulthood have their own signs and manifestations, which are expressed in the emotional, behavioral sphere and affect the cognitive qualities of human activity, then are reflected at the level of body reactions. The mechanism of formation and manifestation of childhood trauma may be different in adulthood (see table 1).

In the United States of America, over half of the cases identified by authorities as abuse are actually cases of neglect. It is believed that neglect is less intrusive, but that is not the case. A comparative study on the developmental repercussions of four types of child abuse—neglect, physical abuse, sexual abuse, and psychologically unavailable parents—concluded that neglected children suffer the most severe consequences.[9, 13] Neglect can take several forms:

Occasional neglect. It appears sporadically, in certain circumstances, without reasons for concern. In fact, some child development specialists even suggest that variations in adult receptivity provide challenges that promote growth, helping the child to make the distinction between ,self' and ,other'. This factor is a necessary condition for progressing towards independence, self-care, and problem-solving. Delaying responses to emotional needs, not paying attention at certain moments, skipping regular meals, lack of emotional support in minor situations, delaying diaper changes, and temporarily forgetting certain responsibilities are not necessarily harmful. However, if these become a constant pattern, then they can indeed lead to emotional and attachment issues.

Table 1.



Mechanism of formation and manifestation of trauma

Type of Trauma	Cause	Stuck feelings	Behavioral manifestation
Neglect Trauma	Rejection from parents: "I don't have time!", "I don't love you!", "Don't bother me!", "Do it yourself!" Or the same nonverbal messages, including through ignoring	Resentment and Anger	Intolerance of rejection, isolation, loneliness, ignoring
Narcissistic Injury	Reproaches, exaggerated demands, criticism and rejection of the child as he is	Fear, Resentment and Anger	I feel ashamed of myself.
A b a n d o n e d Trauma	Abandonment of the child by one or both parents. Due to the lack of time of the parents, the child is left with the grandparents to raise him.	Fear, Resentment and Anger	Fear of betrayal, separation and loneliness. Suspicion, distrust, anxiety, jealousy, distrust in the partner, control of the partner

Chronic neglect. Chronic neglect involves a prolonged and repetitive pattern of depriving the child of care and support. Chronic neglect is not a single incident, but a continuous series of omissions in the neglect of the child over time. Children may experience various deprivations: inadequate food, poor hygiene, absence of medical care, lack of emotional interaction with a responsive adult to their needs, and lack of supervision. This pattern can appear in dysfunctional families: alcoholic parents, gambling addicts, drug-dependent individuals, those with mental disorders, unemployed parents, family impoverishment, or parents who themselves were neglected in childhood and consider such a style of upbringing normal. In these families, the internal atmosphere is chaotic, unpredictable, with few negative interactions, making neglect predominant in the child's life. As a result of chronic neglect, children may develop insecure or disorganized attachment. These children emotionally withdraw, becoming hyper-vigilant to external signals, not knowing what to expect. Young children may show increased irritability, reduced

impulse control, and increased difficulty in self-soothing their distress. [13]

Severe neglect in the family context. Severe neglect is characterized by an environment where the child is constantly deprived of attention, food, and appropriate care from the parents. In extreme cases, the child may suffer from severe malnutrition or untreated medical conditions, endangering their life. A parent who is emotionally unavailable or unpredictable in their reactions develops in the child anxious attachment, mistrust in people, and difficulties in emotion regulation. Chronic lack of affection from parents undermines the child's self-esteem and their ability to understand and express their emotions. A severely neglected child within the family may develop avoidant, ambivalent, or disorganized attachment if neglect alternates with episodes of interaction or even abuse.

Severe neglect within the institutional framework. Extraordinary examples of extreme deprivation are orphanages that "store" a large number of infants and small children. The staff is minimal, often lacking any training in child care, with minimal one-on-one interactions,

leaving the children ignored and devoid of any stimulation throughout their childhood. Staff changes frequently, with infants being cared for by multiple individuals, which is extremely difficult for the development of stable relationships with an adult. Although basic needs are met, the environment itself can trigger severe psychological deprivation for the child.

Post-traumatic anxiety. Adult life can be full of challenges, and the onset of adulthood can represent a critical moment for young people with a history of parental neglect. At this stage of their lives, individuals find themselves faced with managing their own decisions and building new relationships. Young people who did not receive adequate emotional support in childhood may experience intense anxiety during this transition, manifested as: excessive worry, fear of failure, or difficulties in social interaction. A study conducted by Jude Cassidy and his collaborators demonstrated that patients diagnosed with generalized anxiety disorder reported a significantly lower level of maternal affection in childhood compared to those without anxiety.[3]. Research suggests a cumulative risk model: the risk of developing generalized anxiety increases as insecure attachment experiences accumulate in childhood. According to the same study, those with generalized anxiety exhibited a sense of vulnerability in relation to their mother and had difficulties in recalling childhood memories.

The differences in manifestations of anxiety can vary. A young person with an anxious attachment style may experience constant worry, including panic episodes when away from family or when forced to make decisions alone. A young person with avoidant attachment may appear independent on the outside, but internally struggles with significant social anxiety. They may have difficulties in forming relationships with peers, avoiding student-type social activities, and may spend

hours alone, which intensifies their feeling of not belonging. Individuals with both types of attachment may have their academic performance affected – not necessarily due to a lack of intelligence, but because of emotional dysfunctions. Studies conducted on first-year students suggest that insecure attachment is correlated with adaptation difficulties: "Students with a more anxious attachment had poorer academic performance in college. Students with a secure attachment reported lower levels of depression and anxiety. Students from backgrounds with deficient parenting are prone to high anxiety and underperformance, in the absence of supportive interventions."[1, 11]

Attachment theory provides us with information that early relationships with caregivers shape our perception of ourselves and others. Attachment refers to the emotional, cognitive, and behavioral processes that influence the development of interpersonal relationships. Although the need for connection is universal, the way each person forms relationships depends on childhood experiences. In adulthood, two main dimensions characterize attachment: anxious attachment (fear of abandonment) and avoidance of close relationships (avoidant behavior). Research has revealed the link between anxiety and insecure attachment, with those being more predisposed to anxiety [3]. The secure attachment provides the child with a safety base, while avoidant or anxious-ambivalent attachment generates feelings of insecurity. Bowlby suggested as early as the 1970s that ,anxiety may have its roots in early experiences that left the child feeling uncertainty or unavailability from caregivers in times of need ,,[1, 7]. The stressful experiences from childhood, the way he processes fear, and his emotional regulation mechanisms are interconnected.

Studies on parenting style have yielded mixed results, but they suggested that excessive parental control is more strong-



ly related to the development of anxiety than a lack of parental affection [8].

The effects of trauma on the development of anxiety. Psychotraumatology focuses on how traumatic experiences affect the psyche. Early psychological traumas can stem from physical or sexual abuse, severe neglect, and domestic violence witnessed by the child. These are often overwhelming events that exceed what a child can endure. As a result, the child develops psychological survival mechanisms that can persist into adulthood in the form of anxiety. One example would be: the conditioning of fear whereby stimuli associated with the trauma trigger an intense fear response, even years later. The young adult may experience panic attacks or alarm reactions to stimuli that remind them, even vaguely, of childhood trauma. Cognitively, trauma can distort an individual's fundamental beliefs about themselves and the world: many victims of abuse develop the conviction that the world is unpredictable and dangerous, and that "something bad will always happen to them." This cognitive bias of anticipating danger fuels generalized anxiety in adult life. Psychological trauma often involves a loss of the sense of control, which generates an increased level of helplessness - the person feels that they cannot prevent or influence negative events, living in a constant expectation of disaster. Such strategies help explain why young adults with a history of trauma frequently exhibit an increased level of hypervigilance and exaggerated reactions to minor stressors.

Early trauma combined with insecure attachment can create a psychological environment conducive to anxiety. The child develops the impression that the world is dangerous and that support from close ones is unavailable. Subsequently, these events lead to intense and hard-to-regulate anxious reactions in stressful situations.[3]

Hyperalertness and the fight-or-flight reaction, which occur in response to stress,

become chronic states for these individuals, their brains "remaining in a state of heightened alert" long after the actual threat has passed. This phenomenon has been extensively described by specialists such as Bessel van der Kolk, who shows that psychological trauma "rewrites" the brain's alarm system, making it easily activated and stuck in survival mode.

Another central concept in trauma psychology is dissociation – the mind's tendency to ,disconnect' during a very stressful traumatic experience. Dissociation functions as a protective mechanism in childhood, but it can continue later on. Young people who have experienced trauma may oscillate between moments of intense anxiety and periods of emotional numbness or detachment. They may experience memory loss related to childhood or have difficulty integrating the story of the trauma in a coherent manner. All of these aspects are part of the picture of post-traumatic anxiety, distinguishing it from simple generalized anxiety, which does not include dissociation or unwanted flashbacks.

Toxic stress is a concept in developmental psychology that describes the physiological effects of early adversities on a child. According to this idea, toxic stress occurs when a child is exposed to strong, frequent, or prolonged stress, in the absence of the emotional support of an adult who can provide security. Situations such as chronic abuse, severe neglect, growing up in a violent environment or one marked by extreme poverty can trigger a prolonged and exaggerated stress response in a child's body. Thus, stress hormones remain elevated for a longer period, and the neurobiological stress system is overloaded. Without protective elements, the developing child's brain perceives the environment as constantly dangerous.

Some authors emphasize that "toxic stress in childhood can increase the risk of health problems throughout life, including

vulnerability to mental illnesses such as anxiety and depression."[14].

Psychological mechanisms. At a psychological level, a central mechanism is already mentioned as a pattern of excessive attention. The traumatized child learns that danger can arise at any moment, thus developing a constant state of hyper-vigilance towards possible threats. This excessive attention becomes an automated habit, causing the young adult to expect the worst in any context. This is linked to another mechanism: negative attentional and interpretative bias – individuals with trauma tend to prioritize threatening stimuli and interpret ambiguities as signs of danger.

Another psychological mechanism is the difficulty of emotional regulation. Early trauma sabotages the child's opportunity to learn healthy skills to calm their emotions. A young adult may ,not know how to manage their fear,' reaching adulthood. Negative emotions are either forcibly suppressed or gain total control, both strategies being ineffective and leading to psychological suffering.

Regarding memory, childhood traumas can create intense and fragmented "traumatic memories." These memories often include vividly sensory elements stored incorrectly. These memories can abruptly reappear in the form of flashbacks, triggering sudden anxious reactions. Even when they are not conscious, latent traumatic memories can generate an

underlying anxious tone, as if the person is always on the verge of danger. The mechanisms of involuntary repetition of memories have been documented as a factor that maintains PTSD symptoms. Psychologically, post-traumatic anxiety is triggered by: conditioned fear, hypervigilance, inadequate beliefs, emotional regulation deficits, and intrusive memories — all being the result of childhood traumas.

Conclusions:

- 1. Psychotrauma has been defined as the exposure of a person to a shock that involves a threat to life or physical integrity, followed by intrusive symptoms, avoidance, and hyperarousal.
- 2. Early psychological traumas can result from physical or sexual abuse, severe neglect, and domestic violence observed by the child. These are often overwhelming events that exceed what a child can bear. Neglect, as a common phenomenon that can trigger psychotrauma, leaves a negative imprint on the personality in adulthood.
- 3. The traumatized child learns that danger can arise at any time, thus developing a constant over-tension of attention towards possible threats. This excessive attention becomes an automated habit, causing the young adult to expect the worst in any context. This is connected to another mechanism: negative attentional and interpretative bias—traumatized individuals tend to prioritize threatening stimuli and interpret ambiguities as signs of danger.

BIBLIOGRAFIE:

- 1. BOWLBY, J. Separation: Anxiety and Anger. New York: Basic Books. Attachment and Loss: Vol. 2, 1973, ISBN: 978-0465019260
- 2. BULUT S., Freud's Approach to Trauma Psychology and Psychotherapy Research Study 3 (1), 2019. DOI:10.31031/PPRS.2019.03.000554] ISSN: 2639-0612
 - 3. CHORPITA, B. F., BARLOW, D.
- H. The development of anxiety: The role of control in the early environment. Psychol Bull, 124, (1998). 3–21. doi: 10.1037/0033-2909.124.1.3.
- 4. DAFINOIU I., VARGA J.-L. *Terapii scurte*. Collegium Polirom 2005. ISBN 973-681-777-6
- 5. Diagnostic and Statistical Manual of Mental Disorders, 3rd ed., revised 2006



(DSM-III). https://psychiatryonline.org/doi/10.1176/ajp.145.10.1301

- 6. FISCHER, G., RIEDESSER, P. *Tratat de psihotraumatologie*. București: Ed.Trei, 2015. 389 p. ISBN: 973-9419-84-4.
- 7. GALLANGHE M., MARGANSKA A., MIRANDA R., Adult attachment, emotion dysregulation, and symptoms of depression and generalized anxiety disorder American Journal of Orthopsychiatry, 2013, Vol 83, Nr. 1. DOI: 10.1111/ajop.12001 EISSN 1939-0025, PISSN 0002-9432
- 8. KURLAND R. M., SIEGEL H. I. Attachment and Student Success During the Transition to College. NACADA Journal, 2013. 33(2), pp. 16–28.

https://doi.org/10.12930/NACA-DA-12-252 ISSN 0271-9517, 2339-4840

- 9. MIU, A. C., SZENTÁGOTAI-TÁTAR, A., BALÁZSI, R., NECHITA, D., BUNEA, I., POLLAK, S. D. (2022). *Emotion regulation as mediator between childhood adversity and psychopathology:* A meta-analysis. Clin Psychol Rev, 93, 102141. 2022. doi: 10.1016/j.cpr.2022.102141.
 - 10. NISTREAN É., Abordări teoretice

- privind trauma de pierdere. În vol Conferinței științifice naționale cu participare internațională "Integrare prin cercetare și inovare", pp.97-100, USM, 10-11 noiembrie 2020
- 11. ROSENSTEIN D. & HOROWITZ A., *Adolescent attachment and psychopathology*. In Journal of Consulting and Clinical Psychology, 64(2), 244–253. 1996 https://doi.org/10.1037/0022-006X.64.2.244 ISSN: 0022-006X, eISSN:1939-2117
- 12. TURLIUC, M. N., MĂIREAN C., *Psihologia traumei*. Editura Polirom, Iași. 2014. ISBN 978-973-46-5075-0.
- 13. WALKER P. Recuperarea în urma traumei, abuzului sau neglijenței emoționale din copilărie PTSD, 2022, 13 pași esențiali ai procesului de vindecare. Ed. Herald. ISBN 978-973-111-973-1.
- 14. WOLFF N., SHI J., Childhood and Adult Trauma Experiences of Incarcerated Persons and Their Relationship to Adult Behavioral Health Problems and Treatment in International Journal of Environmental Research and Public Health (IJERPH), May 2012, 9(5):1908-26 DOI:10.3390/ijerph9051908, ISSN: 1660-4601

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