

Internet Gaming Disorder in Young People and Adolescent: a Narrative Review

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Abstract:

Starting from the categorical definition of "Internet Gaming Disorder" in young people and adolescent, we proceeded to list the individual characteristics, with particular attention to the statistical, clinical, neurobiological and therapeutic profiles, concluding the analysis of the possible strategies to be used to finalize the resolutions to the problems, arising from the disturbance in question.

Key words: obsessive-compulsive mechanism, adolescent age groups, compulsive shopping

Contents of the manuscript:

1. Definition and clinical context of Internet Gaming Disorder in children and adolescent [2-4]

The American Psychiatric Association [1], in 2015, included the "Internet Game Disorder" (IGD) as a potential diagnosis, to be deepened however with further studies to better clarify the contours, as the increasing use of digital media has always led greater public concern about potential harmful effects, especially among young and adolescent age groups.

We also know that the disorder is more frequent in males between the ages of twelve and twenty years in Asian rather than Western cultures, except for the hypothesis of emulation of Eastern cultures and traditions by Western subjects. The subjects most at risk turn out to be isolated boys with few interpersonal relationships. An associated factor is depression, identified by many as a possible risk factor.

In a study concerning Internet addiction in Chinese adolescents (Liang et al., 2016) a singular relationship between gender and depression is found. While in males depression appears to be a cause of internet addiction (risk factor), in females it seems a consequence. It would be interesting to investigate whether this relationship can be valid also for video game addiction, but currently the data in possession is really small.

Although IGD is not universally defined in the global clinical scenario, it is therefore conventionally classified in academic circles as the "persistent, growing and recurrent use of the Internet in order to use online games, often with other players, bringing a clinically relevant and significant suffering.

Despite its name, however, individuals are not required to experience symptoms of addiction exclusively with online video games. The

problematic use can occur both offline ("Computer Addiction", characterized by the tendency to excessive involvement in virtual games that do not involve interaction between multiple players and are not played on the net) and online ("Net Compulsion", in which you highlight excessive involvement and compulsive behaviors related to various online activities such as gambling, compulsive shopping, role-playing games), with a higher prevalence for the latter.

However, it is important to underline that in itself the described behavior cannot by itself serve as a basis for the diagnosis, but a broader and more articulated descriptive framework is needed, causing a "clinically significant impairment", manifesting at least five of the nine identified criteria:

- 1) concern for the games: the individual thinks about the previous game activity or anticipations playing in the next game; game becomes the dominant activity in everyday life;
- 2) withdrawal symptoms when the game is taken off: these symptoms are generally described as irritability, anxiety or sadness;
- 3) tolerance: the need to spend increasing amounts of time engaged in games;
- 4) failed attempts to control or reduce participation in the games;
- 5) loss of interest in real life relationships, past hobbies, and other entertainment as a result of and with the exception of, games;
- 6) continued excessive use of games despite the knowledge of psychosocial problems;
- 7) deceived family members, therapists or others regarding the amount of play;
- 8) use of games to escape or alleviate a negative mood (for example, feelings of impotence, guilt or anxiety);

9) has put at risk or lost a significant relationship, work or educational or professional opportunity due to participation in the games.

Also the etiology of the pathological condition is uncertain and recent studies show that the psychopathology under examination is certainly multifactorial: familial, environmental and neurobiological.

Finally, related to the diagnostic hypothesis under examination we find, in comorbidity, anxiety and mood disorders, personality disorders, depression, attention, sleep and substance and behavioral dependencies. Previous large-scale studies suggest that internet gaming disorder among children and adolescents has become an important public concern. Minors are known to be particularly susceptible to problematic internet gaming using owing to age-related underdevelopment of cognitive control. It has been shown that precursors of addictions appear during adolescence; therefore, prevention efforts must be established targeting minors who have their first experience with addictive substances and behaviors during pubescence. Since the DSM-5 classification of IGD in 2013, studies on IGD have drastically increased in number.

2. The neural correlates in Internet Gaming Disorder [6-7]

There are different hypotheses regarding the biological basis of this particular type of addiction. An interesting 2012 study by Han and colleagues shows a different distribution of neuronal cell bodies between professional and pathological players. The first show a greater volume in the left cingulate gyrus while the pathological ones, a greater volume in the left thalamus.

A more recent study shows that patterns of brain connectivity are altered in subjects with video game addiction (Zhang et al., 2016). In this sense, an abnormal functioning of the interaction between brain areas can contribute to behavioral deficits in addiction-related disorders. The study shows a pattern of connectivity between the insula and multiple areas, different in young adults with video game addiction.

3. Clinical strategies for the management of the disorder [5]

The discourse made for the etiology is similar for the topic of clinical treatment: first of all the cognitive-behavioral approach is preferred, followed by the systemic-relational / family approach and the strategic one. All supplemented by a possible drug therapy, if deemed necessary.

The treatment of new addictions is currently carried out on the basis of clinical-psychopathological characteristics similar to disorders of the obsessive-compulsive spectrum and impulse control, substance use disorders and mood disorders, especially those belonging to the bipolar spectrum (Casha and colleagues, 2012).

From a pharmacological point of view, different classes of drugs have been used such as mood stabilizers and glutamatergic modulators and opioid antagonists which, in personalized combinations, have shown good efficacy in reducing symptoms and controlling craving. SSRI type antidepressants have been used with good results, due to the frequent comorbidity of IAD with depression and anxiety (Casha and colleagues, 2012).

In most cases it is always useful to associate specific psychotherapy interventions to the pharmacological treatment that change as the theoretical approach and the epistemology of reference change.

The model of Davis R.A. is the benchmark for cognitive behavioral therapy (CBT) in the treatment of IAD. The use of CBT is justified by the good results obtained with this psychotherapy in the treatment of disorders of impulse control, gambling disorder, compulsive shopping, bulimia nervosa and binge eating disorder (Fata, 2012).

The focus of CBT is to bring to light the subject's cognitive distortions during exposure to the stimulus, provoke them, allow the subjects to catastrophic and, finally, work on cognitive restructuring.

The behavioral components of CBT for the treatment of IAD include: recording the use of the internet, making a list of thoughts and feelings experienced through all five senses during the online activity, keeping the subject away from the internet for a defined period of time showing that nothing negative happens, to observe one's cognitive reactions towards the network through multiple exposures to the various internet functions, to foster the subject's self-motivation by writing memos (reminder cards), to be read periodically during the course of the day, five problems that the excessive use of the internet has caused to the subject and five benefits that he would get by solving his dependence on the net. The patient is then taught the self-induced progressive relaxation technique to be implemented to counteract the physiological activation resulting from the activity on the network. The introduction of physical exercises and sports activities can then compensate for the reduction of dopamine linked to IAD and favor the effectiveness of CBT techniques on the disorder (Fata, 2012).

Kimberly Young (1999) has identified some treatment strategies by analogy with those with which substance dependencies are addressed. Initially, a reorganization of the time spent on the net is proposed, foreseeing the use of external factors to block the online activity. For example, knowing that you have to go to work at 8, you are expected to connect to the network at 7, leaving the subject little time available to browse. Another strategy is to give the subject as a target a maximum number of hours of daily connection to be controlled through a diary, setting the connection time limit with an alarm clock close to the PC to have an external stimulus that favors compliance with the prescription. It can then be indicated to the subject to replace the online activity that sees him most involved with another activity, always online, which has not yet led him to a real addiction.

In the strategic sphere, pathologies linked to the use of the Internet can be divided into two types: those based on pleasure and those based on an obsessive-compulsive mechanism (Cagnoni & Nardone, 2002). The patient through therapeutic stratagems is unconsciously led to live emotional experiences that unblock his rigidity and direct him towards a new vision of reality. In pathologies focused on pleasure, the maneuvers focus on interrupting the pleasant ritual that the subject cannot do without. For this reason, in order to take possession of the symptom and act on the pleasure of the ritual, the ritual itself is prescribed, but by changing its structure (the player can bet a small pre-established sum every day even if he had not decided to do so). A second possibility of very effective intervention is the inclusion in the virtual a bit of reality. The active



participation of a family member in online browsing is an example that allows the real to counteract the pleasure of the virtual.

If there is an obsessive-compulsive mechanism, a different logic will be followed. In this case the subject is a victim of his control strategies. In this case, the main requirement is to perform the ritual in a more onerous way, confining it to a specific space and time. It is therefore a question of opposing the ritual with a counter-ritual that reduces its effect (Cagnoni & Nardone, 2002).

Hypnotherapy can also be used successfully in the treatment of IAD. Erik Wright (1987) has indicated some main strategies to be used to overcome addictive-based habits:

- a) *Strategy linked to future positive consequences.* This strategy emphasizes the long-term rewarding aspects of overcoming dependency by stressing the negative aspects of the present. For this purpose, future-oriented imaginative techniques are used.
- b) *Strategy linked to the accentuation of negative consequences.* Wright believes there is the possibility of putting the patient in front of the negative consequences of his addiction, at the same time devaluing his immediate pleasure. In this case, the technique used is to evoke imaginative fantasies perceived as adverse, focusing on the negative consequences of behavior that are specific to the subject.
- c) *Strategy related to replacing the means of gratification.* The focus in this case is on the search for non-destructive methods that allow the subject to reduce his state of tension. Central in this case are the self-guided relaxation techniques that allow to transport the hypnotic suggestions in the situation in which the individual needs help. These techniques allow you to control breathing, muscle tension and the associated feeling of anxiety, providing the subject with the perception of self-efficacy, thus encouraging the implementation of adequate coping strategies.
- d) *Self-gratification strategy.* In this case, we work on reinforcing the subject's Self through suggestions that increase self-esteem, the feeling of self-efficacy and the intrinsic motivation for change.

All these strategies make it possible to structure conscious decision-making behavior in the subject. Instead of answering automatically and habitually, the subject is led to consciously decide whether to allow himself the luxury of a destructive habit (Hammond, 1990).

In the event that the dependency has negatively involved the family, family therapy is introduced. In this case, the therapy allows the family to

be co-protagonist of the change and support the motivation of the subject to face and resolve the addiction.

Support groups are a valid therapeutic alternative especially in those situations where internet addiction has been produced by lack of support within the social network to which they belong (Young, 2010).

Because of the complexity of these patients, it is often possible to resort to a multimodal treatment that involves the use of drugs combined with different forms of psychotherapy (Young, 2010).

When the obsessive circle of dependency is interrupted, the subject is encouraged to resume the activities that had been neglected due to his problem according to his own hierarchical scale. At the end of the therapy, it may be useful to record the techniques that have produced the best results in the subject to reuse them in case of recurrence of the disorder.

Pending a better randomization of data and studies, patient prevention and education is the best solution, according to the recent guidelines of the American Academy of Pediatrics concerning the use of media in general: discouraging the positioning of the media in children's bedrooms and encourage parents to limit the total amount of entertainment screen time in general to less than two hours a day, as access and amount of playing time tend to be IGD risk factors.

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