

THE INDIVIDUAL SUSCEPTIBILITY TO SOME OCCUPATIONAL TOXIC EXPOSURE

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Rezumat: Expunerea profesională cronică la solvenți organici volatili, mai cu seamă cei aromatici, poate determina, la persoanele predispuse, o stare de dependență psihică, ce se poate constitui uneori într-o adevărată toxicomanie. Printre cei mai importanți factori care duc la instalarea acestei dependențe se numără factorii de susceptibilitate individuală: biologici, psihologici, socioprofesionali.

Abstract: Chronic occupational exposure to volatile organic solvents, especially aromatic ones, may determine in people prone to a state of psychological dependence, which can sometimes be a real addiction. Among the most important factors leading to installing this addiction include individual susceptibility factors: biological, psychological, socio-professional.

SCIENTIFIC ARTICLE OF BIBLIOGRAPHIC SYNTHESIS

Chronic occupational exposure to organic solvents in industry may result in the emergence of psycho-behavioral and neurological changes, which proves their influence on the nervous system. It can cause by people with a certain predisposition a true psychological addiction, being a real toxicomania (1).

"Undoubtedly, there is no etiology for addiction" – so wrote J. Molto and C. Radel in 1995, but there are still a number of factors that often coexist" (2).

Initiation and continuation of substance abuse capable of inducing toxicomania is determined by the complex interaction of several factors: the pharmacological properties of the substance, the possibility to purchase each drug - availability, personality and the level of expectation of the user, the general context in which the drug is used, etc. (3). From this multitude of factors an important role comes to the factors of individual susceptibility.

Factors which are determining individual susceptibility to drug consumption: Biological factors, Psychological factors; Socio- professional factors.

1. Biological factors - the role of the pleasure / reward mechanism

The neurobiological researches have allowed the identification of mechanisms involved in increased susceptibility to consumption (4). This involves the so-called reward-mediated dopaminergic systems that are at the bottom of consumption. Consuming certain products creates a pleasant feeling, which stimulates the production of neurotransmitters in the brain, resulting an increased level of dopamine (the pleasure hormone). All drugs act directly on the brain cells which release dopamine. This "light" fun is stored as a means of removing unpleasant sensations. It causes a "short circuit" of normal brain activity so that, over time, the brain adjusts to these increased

concentrations of dopamine, making it absolutely necessary for a "good" function. This leads to the perpetuation of addictive behavior and the individual becomes a "prisoner" of the product, only capable of producing pleasure to function normally.

We find involving hedonism ("cult of pleasure") to explain susceptibility by drugs since the Epicureans, philosophical currents of ancient Greece according to which the search and obtaining pleasure was privileged in all human actions. The Anglo-Saxon philosopher Spencer emphasized dualism between the two fundamental concepts: motivation and pleasure.

For neurophysiologists, pleasure includes both a positive perception (bene-perception), which contributes to human development, and a negative perception (noci-perception) with adverse consequences on the body.

Regarding motivation, this can also be seen with the same two issues:

- Positive motivation - related to positive hedonic processes (good nutrition, rest, entertainment);
- Aversive motivation - associated with negative hedonic processes (pain, unpleasant sensations, and failures).

Behavioral theory emphasizes the existence of three main ways: positive reinforcement, negative reinforcement and operant conditioning. Psychoactive substances induce effects that could explain, at least at the neurobiological level, individual susceptibility, and dependence (4).

Positive reinforcement - is to increase the likelihood and frequency of repeating a behavior, followed by a specific stimulus - in these case drugs.

Negative reinforcement - include situations that arise after the removal of a stimulation effect.

Operant conditioning - represented by the consequences of behavior.

Also in the spirit of behaviorism, we can talk also about the notion of guilt - punishment. According to this notion,

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the presence of an aversive stimulus during or after the behavior is likely to reduce the likelihood and frequency of this behavior. Dopamine is the neurotransmitter CNS involved in behavioral processes of motivation and reward systems. Some drugs act by increasing dopaminergic activity. Under normal circumstances, dopamine is released from the synaptic terminals; its concentration is responsible for maintaining a normal mood and general tonus. A low concentration of dopamine is responsible for depressive disorders.

In other meanings, biological theory refers to the assumption of a biological abnormalities (predisposition due to a genetic defect or a chemical imbalance in the CNS) or changes in cellular adaptation to chronic exposure to substances that give addiction - metabolic theory (5).

2. Psychological factors may be:

a) Inborn – which are usually affection, emotion and sociability.

There are so-called predisposing personalities (4), such as:

- Antisocial personalities;
- "Borderline" personalities (emotional instability, self-image disturbance, multiple uncertainties, etc.);
- Histrionic personalities (huge mental lability, excessive emotional responses, addicts, those who are unable to make decisions, etc.);
- Those with anxiodepressive disorders.

b) Obtained - the patterns of family cultural, social, etc.

Psychological theory leading some authors to believe that addiction is simply a matter of behavior! (6).

3. Socio-professional Factors

- Facilitating the access to the used substances;
- Pressure and the contribution of a group (all ages);
- Difficult working conditions (hard-to-reach standards, fixed positions, repetitive, isolated work places, high risks and responsibilities, etc.).

Generally speaking, there are a number of factors that are influencing / conditioning addiction, of which the most important are:

- Cultural factors (attitudes, practices of consumption, availability of substance, etc.).
- Factors related on peoples entourage (models, events, experiences, etc.).
- Personal and interpersonal factors (influences, pressures from the environment, lifestyle, personality, sexuality, etc.)(7).

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