

PATHOLOGICAL GAMBLING AS A NON-SUBSTANCE ADDICTION: FROM THEORY TO THERAPY

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Both main diagnostic and classification systems (DSM-IV, ICD-10) define pathological gambling as a disorder of impulse control.

Diagnostic criteria, characteristics of course and outcome, and methods of treatment are more similar to psychoactive substance dependencies.

DIAGNOSTIC CRITERIA OF PATHOLOGICAL GAMBLING (DSM-IV):

1. Is preoccupied with gambling
2. Needs to gamble with increasing amounts of money in order to achieve the desired excitement
3. Has repeated unsuccessful efforts to control, or stop gambling
4. Is restless or irritable when attempting to cut down or stop gambling
5. Gambles as a way of escaping from problems or of relieving a dysphoric mood
6. After losing money gambling, often returns another day to get even
7. Lies to family members, therapist, or others to conceal the extent of involvement with gambling
8. Has committed illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling
9. Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling
10. Relies on others to provide money to relieve a desperate financial situation caused by gambling

DIAGNOSTIC CRITERIA OF SUBSTANCE DEPENDENCE (DSM-IV):

1. Tolerance
2. Withdrawal
3. The substance is often taken in larger amounts or over a longer period than was intended
4. There is a persistent desire or unsuccessful efforts to cut down or control substance use
5. A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects
6. Important social, occupational, or recreational activities are given up or reduced because of substance use
7. The substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance

DIAGNOSTIC CRITERIA OF IMPULSE CONTROL DISORDER, e. g. pyromania (DSM-IV):

- A.** Deliberate and purposeful fire setting on more than one occasion.
- B.** Tension or affective arousal before the act.
- C.** Fascination with, interest in, curiosity about, or attraction to fire and its situational contexts.
- D.** Pleasure, gratification, or relief when setting fires, or when witnessing or participating in their aftermath.
- E.** The fire setting is not done for monetary gain, as an expression of sociopolitical ideology, to conceal criminal activity, to express anger or vengeance, to improve one's living circumstances, in response to a delusion or hallucination, or as a result of impaired judgement.
- F.** The fire setting is not better accounted for by Conduct Disorder, a Manic Episode, or Antisocial Personality Disorder.

GAMBLING

1. Preoccupation with gambling
2. Increasing amounts of money
3. Unsuccessful efforts to control
4. Restless or irritable when stop
5. Way of escaping from problem
6. Often returns to get even
7. Lies to conceal gambling
8. Illegal acts
9. Loss of significant relationship
10. Reliance on others to relieve problems

SUBSTANCE DEPENDENCE

1. Tolerance
2. Withdrawal
3. Loss of control
4. Unsuccessful efforts to stop
5. Preoccupation with use
6. Reduction of important activities
7. Continuation in use despite of physical or psychological problems

GAMBLING

1. Preoccupation with gambling
2. Increasing amounts of money
3. Unsuccessful efforts to control
4. Restless or irritable when stop
5. Way of escaping from problem
6. Often returns to get even
7. Lies to conceal gambling
8. Illegal acts
9. Loss of significant relationship
10. Reliance on others to relieve problems



IMPULSE CONTROL DISORDER (pyromania)

- A. Purposeful fire setting
- B. Tension before the act
- C. Fascination with fire
- D. Pleasure when setting fires
- E. Fire setting is not a result of judgement
- F. Fire setting is not accounted for another psychical disorder

NEUROBIOLOGY OF ADDICTIONS

Neurobiological studies also confirm the close similarity of pathological gambling (and other so-called non-substance addictions) to substance dependencies with all theoretical and therapeutical consequences.

REWARD SYSTEM

(DEFICIT IN DOPAMINERGIC NEUROTRANSMISSION)

Lack of ability to experience positive feelings from everyday life situations leads towards an intuitive search of substitute sources of pleasure.

The brain itself “does not care” whether the source of its reward is an exogenous substance (alcohol, opiate) or various non-substance stimuli (gambling, internet, shopping) – the advancement of the addictive behaviour takes place through the same changes of neurochemical functioning by sensitizing brain structures.

REWARD SYSTEM

(DEFICIT IN DOPAMINERGIC NEUROTRANSMISSION)

The neural pathways which take part in the control of motivated and learned behaviour are represented mainly by the dopaminergic structures located in the ventral tegmental area joined with the limbic system through nucleus accumbens (Koob, Bloom, 1998).

Molecular-genetic association studies emphasise the role of mesolimbic dopaminergic system in the pathogenesis of addictions. The higher frequency of allele A1 for the polymorphism of dopamine D2 receptors (Comings, 1998) as well as the polymorphism of the dopamine receptors D1, D3, and D4 are being studied.

REWARD SYSTEM (DEFICIT IN DOPAMINERGIC NEUROTRANSMISSION)

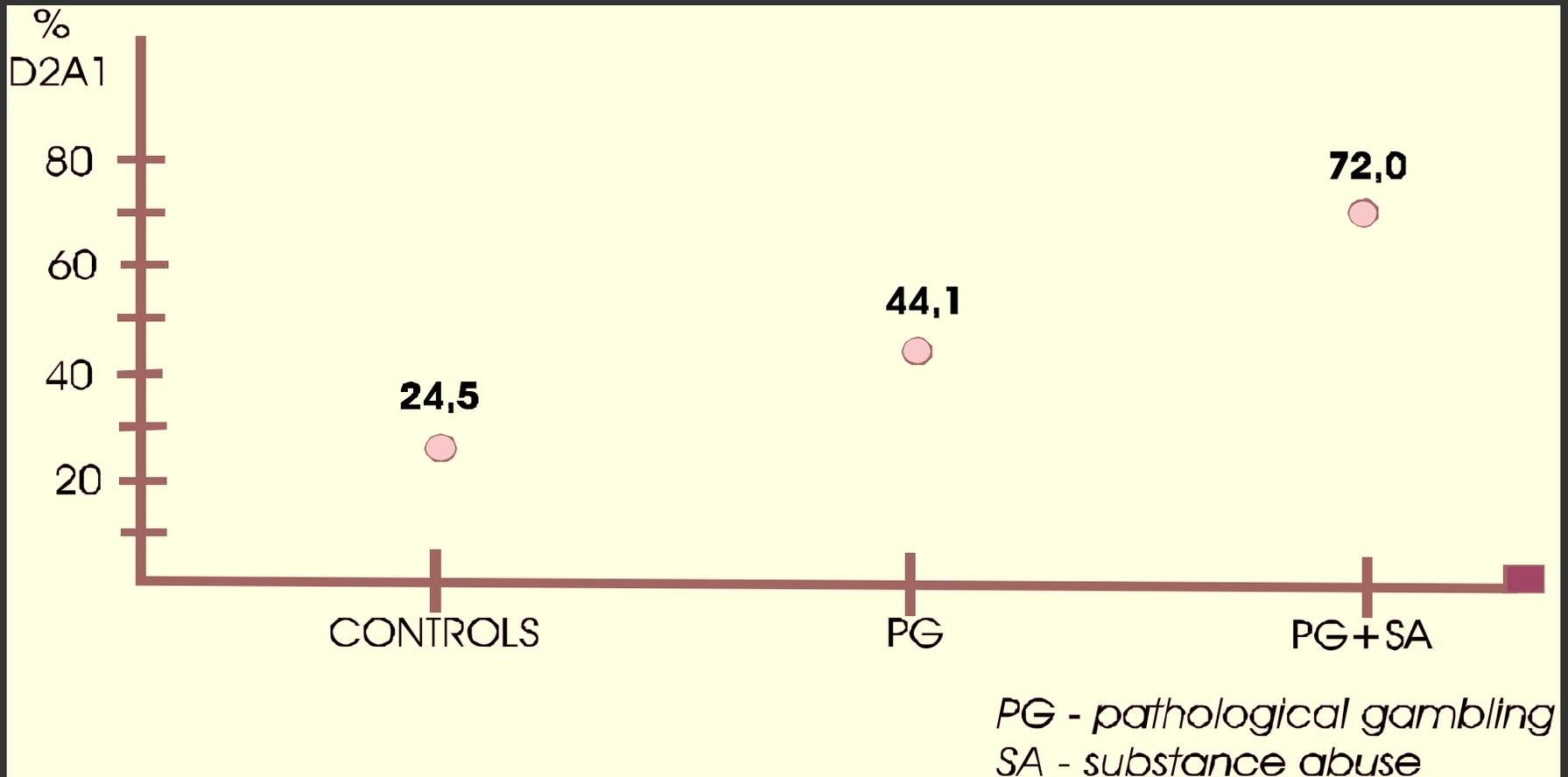


Fig. 1 The additive effect of pathological gambling and substance abuse on the prevalence of the D2A1 allele in males
(adapted from Comings, 1998)

SUICIDALITY

(DEFICIT IN SEROTONERGIC NEUROTRANSMISSION)

Pathological gambling carries an increased risk of suicide. Kausch (2003) reports 29% of patients - pathological gamblers, who underwent treatment after a suicide attempt. Gougler et al. (2007) observed different forms of suicidal behavior among 4 to 40% of pathological gamblers.

Besides the situation-dependend depression reaction, a probable cause is the connection between a dysfunction of serotonergic neurotransmission and the autoaggressive behaviour analogical to type II alcoholism according to Cloninger (1981).

SUICIDALITY

(DEFICIT IN SEROTONERGIC NEUROTRANSMISSION)

Examined are the genetic determinants of serotonergic system which modify the tendency to hetero- and autoaggressive behavior - such as the polymorphism of genes responsible for serotonin transporter or tryptophan 2,3-dioxygenase.

A theoretical outcome of the effect of the group SSRI in the treatment of pathological gambling is the concept of "male depression" in which the deficit of the serotonergic function manifests through a broad spectre of "non-depressive" psychopathological syndromes.

SUICIDALITY

(DEFICIT IN SEROTONERGIC NEUROTRANSMISSION)

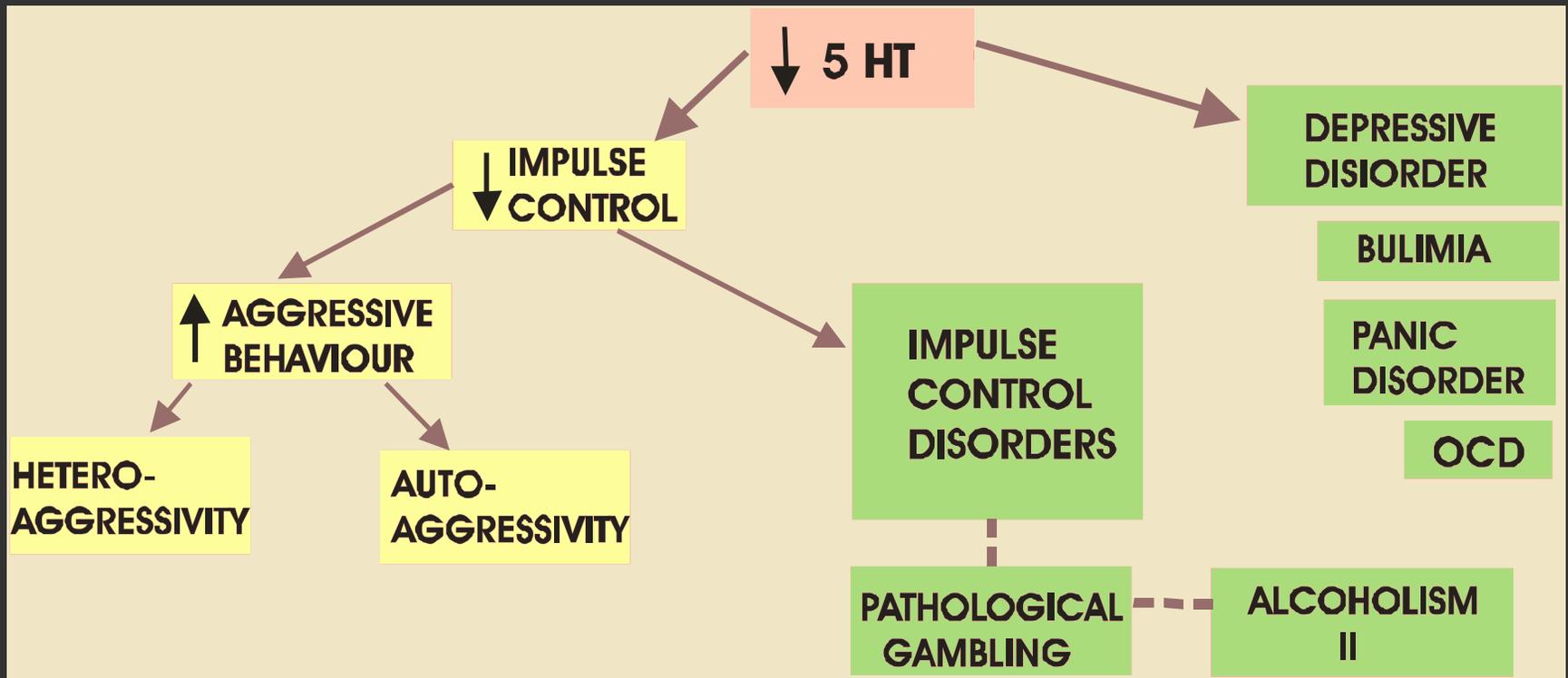


Fig. 2 Nosological and non-nosological consequences of deficit of serotonin

(Nabelek et al., 1997)

NEUROBEHAVIORAL MODELS

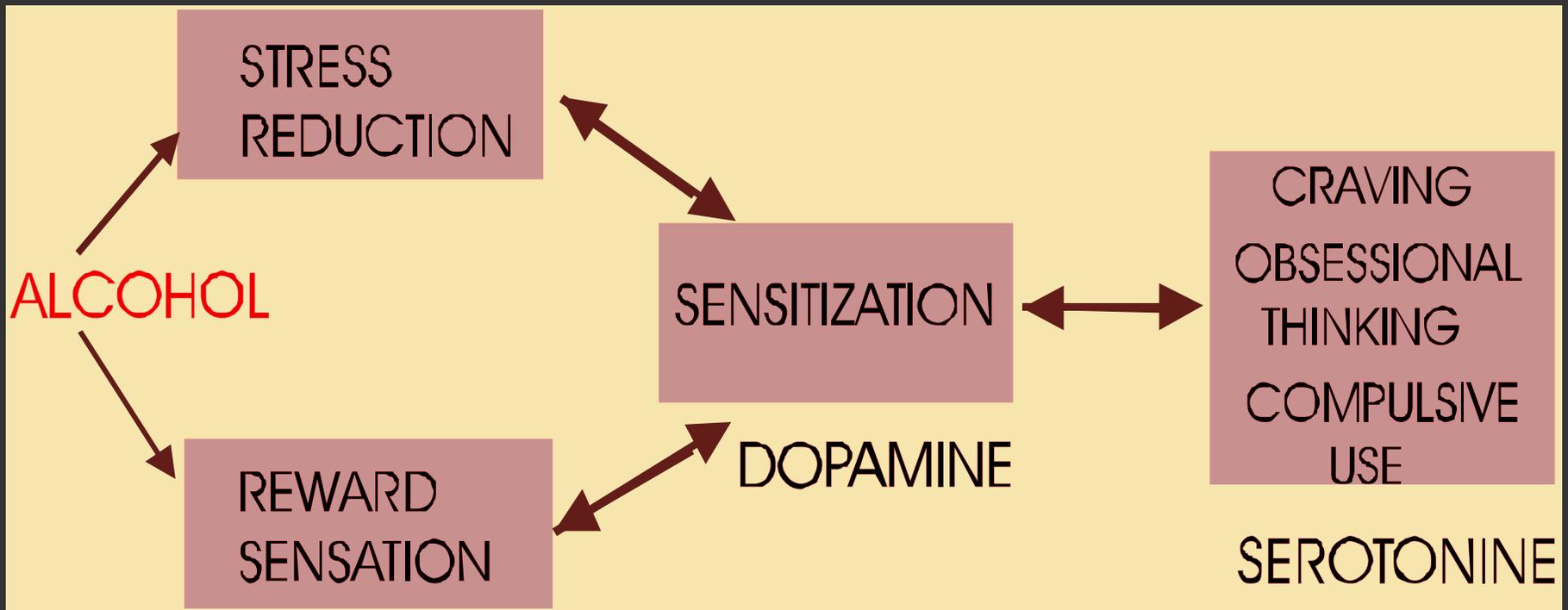


Fig. 3 Neurobehavioral model of alcohol dependence

(adapted from Anton, 1996)

NEUROBEHAVIORAL MODELS

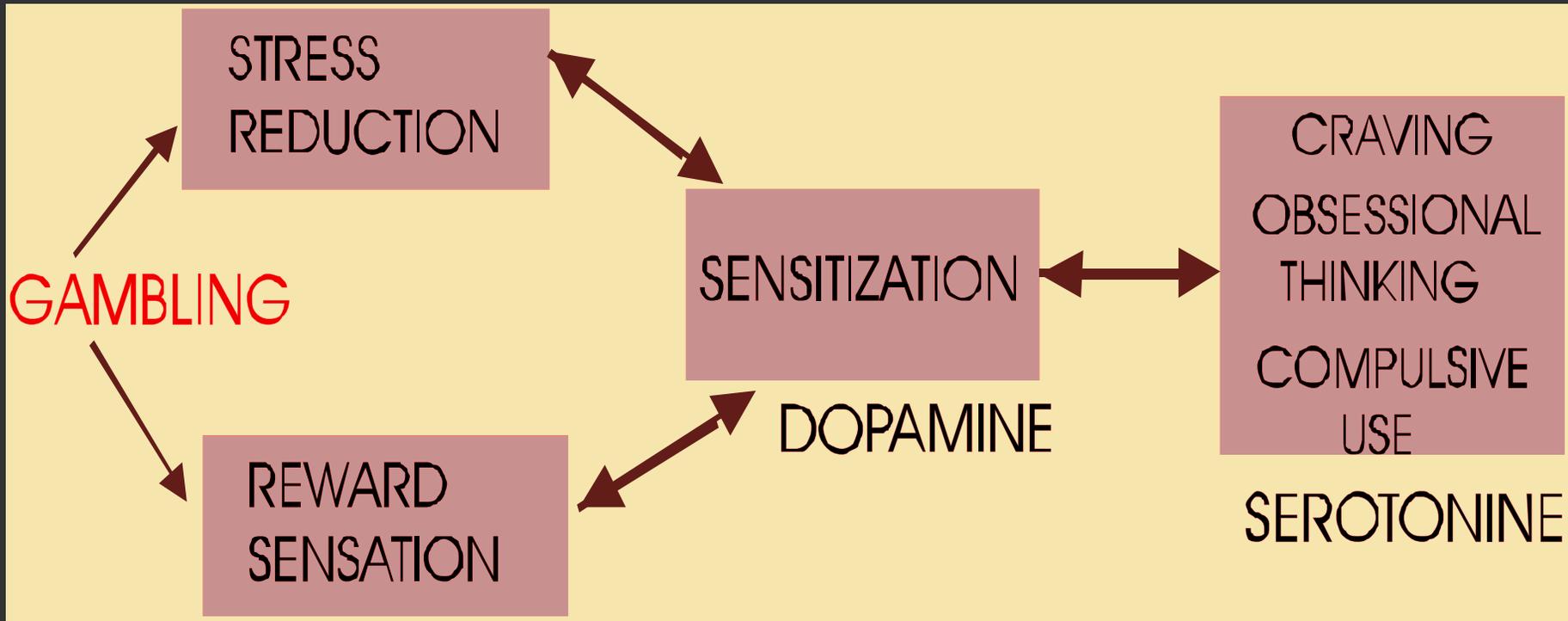


Fig. 4 Neurobehavioral model of pathological gambling
(modified Antons schema, Nabelek et al., 1997)

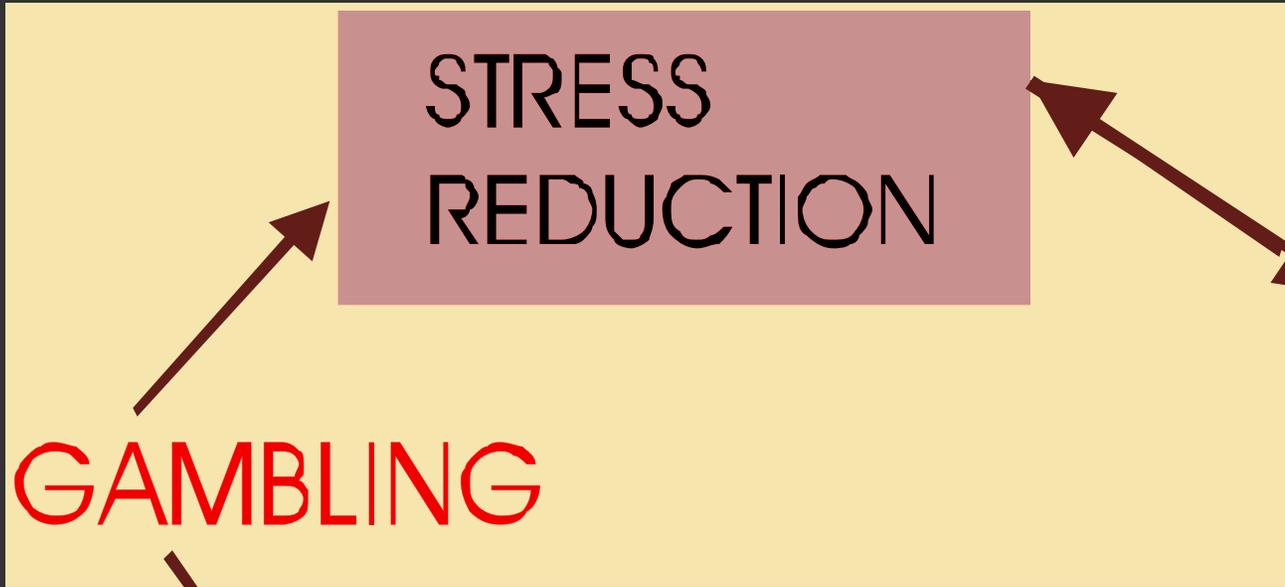
NEUROBEHAVIORAL MODELS



endorphins, enkephalines, dopamine

Fig. 4a Neurobehavioral model of pathological gambling
(modified Antons schema, Nabelek et al., 1997)

NEUROBEHAVIORAL MODELS



GABA, noradrenaline, serotonin

Fig. 4b Neurobehavioral model of pathological gambling
(modified Antons schema, Nabelek et al., 1997)

NEUROBEHAVIORAL MODELS

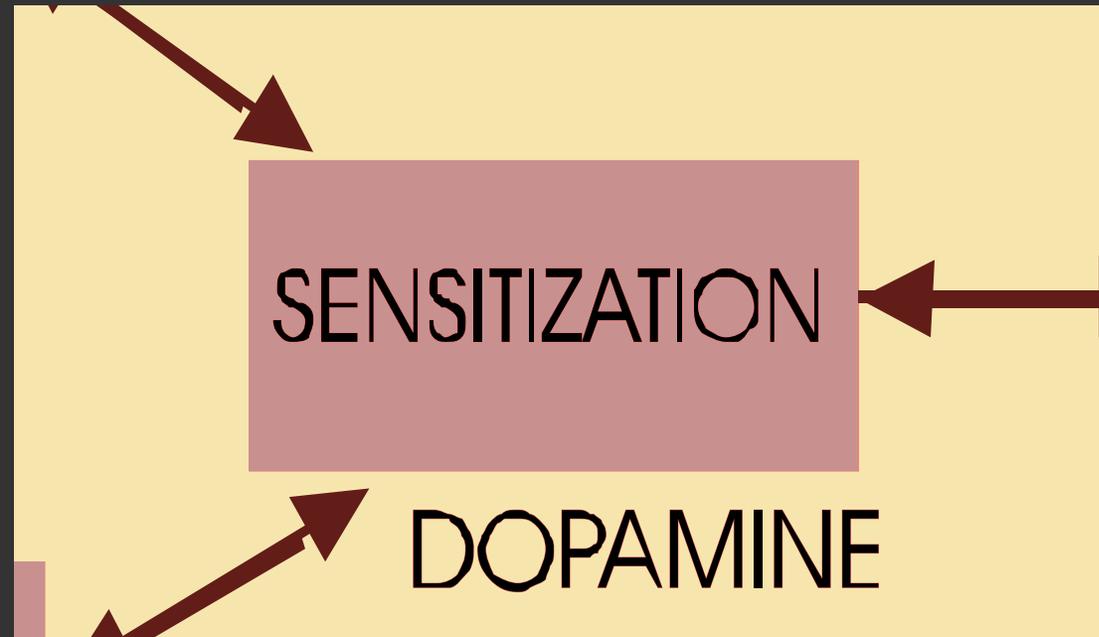


Fig. 4c Neurobehavioral model of pathological gambling
(modified Antons schema, Nabelek et al., 1997)

NEUROBEHAVIORAL MODELS



Fig. 4d Neurobehavioral model of pathological gambling
(modified Antons schema, Nabelek et al., 1997)

THERAPY OF PATHOLOGICAL GAMBLING

The most important practical consequence of the close relation between pathological gambling and psychoactive substance dependencies are the strategy and methods of treatment.

The system of treatment introduced in our department of psychiatry is based on the theoremas of regime treatment of alcoholism.

THE THERAPY OF PATHOLOGICAL GAMBLING

Treatment is aimed at the raising of patients' affective and frustration tolerance, improvement of their social and professional integration, building (or rebuilding) of adequate family and personal ties and restoration or restructuring of patients' personality, including their hierarchy of values.

We can recognize several relatively defined stages.

THERAPY OF PATHOLOGICAL GAMBLING

1. Contact stage

The potential patient gets in contact with a professional, who is able to determine the diagnosis, inform him about the aims and methods of treatment as well as about the risks and outcomes of avoiding it.

The successful completion of this phase should be when the patient accepts his addiction as an illness which requires treatment and accepts the treatment methods recommended by a professional.

THERAPY OF PATHOLOGICAL GAMBLING

2. Treatment stage

It consists of several items joined together in a complete system. The whole program is structured, patient is subjected to a set of complex of limitations and duties.

The most important strategies used in this stage are didactotherapy, community sessions with therapists, individual and group psychotherapy, communication through diaries, elaborates from lectures, composition and presentation of patient's CV, physical activities (yoga, sports etc.), ergotherapy, passive or active artetherapy, psychodrama and family therapy.

THERAPY OF PATHOLOGICAL GAMBLING

2. Treatment stage

In some cases drugs are used - to soften the intrapsychical tension and depressive experiencing as well as to decrease the desire for playing.

Clinical experience has shown that better therapeutic results can be obtained through the combination of drugs and psychotherapeutic methods - while drugs can influence the strength of subcortical impulses, application of psychosocial methods can strengthen the cortical inhibition mechanisms and thus lead to more successful control of behavior.

THERAPY OF PATHOLOGICAL GAMBLING

3. After-treatment stage

The last phase of the treatment lasts basically for the rest of the patients' lives.

Patients visit psychiatric ambulance or ambulance for the treatment of addictions, they are invited for repeated treatment aimed for strengthening or renewing of the habits and resistances gained from the previous treatment.

The role of sociotherapeutic clubs of abstaining patients is also important, whether attended by therapists or led by self-help voluntary organizations.

CONCLUSIONS

The pathological gambling behavior can be viewed as an addictive disorder - without the confounding variables usually involved in addictions to exogenous substances.

A logical conclusion of the conceptualization of pathological gambling can be the suggested concept of a common category of addiction disorders including both substance and non-substance addictions, which should be implemented in the upcoming revisions of psychiatric classification systems

(Nabelek, 1997, Musalek, 2007).

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