

DISTURBANCES OF TIME EXPERIENCE IN PATIENTS WITH OPIOID DEPENDENCE¹

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In the beginning of our research we hypothesized that drug addicts' level of self-regulation is influenced in a specific way by their psychological time, which includes such elements as: (1) estimates of synchronism, sequence, duration and speed of life events, (2) their relation to the present, remoteness in the past or future, (3) feelings of compactness or extension of time, of its discreteness or continuity, limited or infinitive nature, (4) awareness of age and age periods, (5) ideas about life expectancy, death and immortality, (6) historical links of one's own life with that of previous and subsequent generations (Kronik, 1987). According to the theory of higher mental processes of Lev Vygotsky (1962, 1978), personal self-regulation is based on an inner psychologic system of signs and symbols. In our opinion, this system includes the individual model of time, which is an integral result of one's time experiences and a working instrument of one's self-regulation.

We hold the opinion, that alteration of an individual's model of time is a significant psychological reason for different types of impulse-control disorders in general and specifically of substance dependence and manifests itself by lack of insight into the meaning of their life course. This idea is similar to the third general postulate of the temporal approach to psychiatric disorder: "Distortions of psychological time disrupt a person's sense of control over the future and lead to psychopathological vicious cycles" (Melges, 1982, p. XX).

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The purpose of this study is to describe new empirical data to the support of these ideas analyzing the results of our pilot study in Russia, January-May 2004.

The subjects were 41 patients (15 males and 26 females, ages 18 to 32) who voluntarily came for treatment (average for 28 days) at a locked addiction in-patient center in Moscow. The study was conducted during 10 to 20 days there. At that time all patients were diagnosed with Opioid Dependence (DSM-IV: 304.00) in cases of treated acute opioid withdrawal.

The control group included 22 healthy volunteers (9 males and 13 females, ages 18 to 32) from Moscow, and Murmansk, who denied using any drugs or having any psychiatric diagnosis.

The research was approached in a causometry framework which is based on the goal-and-causal theory of psychological time. *Causometry* is the method for analyzing the personal image of time as an amalgamation of one's significant life events and various goals and causal relationships between the events, e.g. a multi-layer time composition of the memories of one's past, the experiences of one's present, and the expectations of one's future (Kronik, Akhmerov, 2003). The primary concept of the underlying theory is that the human experience of time depend on the way significant life events are perceived to be connected one to the other (Golovakha, Kronik, 1984).

In this research we used the assessment software program LifeLine®, which is the computer-based version of causometry in Russian (Kronik, Pajitnov, Levin, 1991). The English version of this program is called LifeLook® (LifeLook.Net, 2004). Abbreviation LL is a common short name for both language versions.

Using this approach, the following time differences between control and patients were found.

A. DISTORTION OF PSYCHOLOGICAL TIME

(1) Subjective Minute

Addicts estimated 60 second intervals less correctly than respondents of control group: in average, one subjective minute equals 46 second for patients and 62 second for the

control group ($p < 0.05$). We hypothesize, that the reason of this finding is direct influence of psychological component of opioid withdrawal (anxiety, depression) on time perception.

(2) Horizon of Significances

We propose three indexes of Horizon of Significances: HS-total, HS-past, and HS-future. Index of HS-total, equals the interval (years) between the data of the chronologically last future event and the data of the chronologically first past event within the personal list of 15 most significant life events. Index of HS-past equals the interval (years) between the current date and the date of the chronologically first past event; index of HS-future calculates accordingly. These indexes are significantly lower in the patients group than in the control group (see Figure 1). Differences between control and patients groups in HS-past, HS-future, and HS-total are statistically significant ($p < 0,05$). This phenomenon could be called *psychological chronodystrophy*.



Figure 1. Indexes of Horizon of Significance in control and patients groups.

(3) Degree of Eventfulness

According to the results of diagnostic procedure Assessment of Five-year Periods (AFP) it is typical of these patients to estimate current five-year interval and all life as less rich of significant events than control group (50% of patients and only 9% of respondents in

control group). Phenomenon of lack of the significant events in the present was named *the hole in the life graph* (Kronik, Akhmerov, Speckhard, 1999). Figure 2 illustrates this phenomenon.

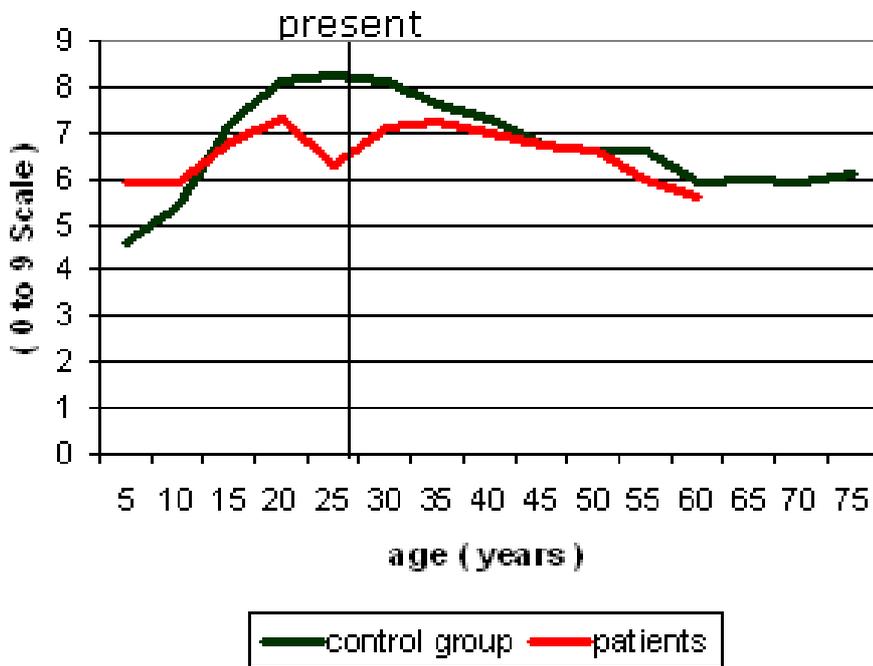


Figure 2. Average estimates of eventfulness of 5-year periods in control and patient groups (axis X = age, axis Y = eventfulness).

Additionally, the low index of Subjective Life Expectancy demonstrates drug addicts' experience of short biological perspectives (see Table 1).

Table 1. Some AFP indexes in patients and control groups

AFP indexes	Patients N = 41	Control N = 22	Significance of differences
Average estimation of Present	6.3	8.2	p < 0.01
Subjective life expectancy (years)	59.3	73.9	p < 0.001

(4) Motivational Connections²

Opioid addicts' inner model of time is characterized by low index of Motivational Intensity of connections between the most significant life events. It demonstrates the lack of awareness of life as a continuity and fortuitousness of significant life events. In our opinion it is a characteristic of a lack of prolonged regulation of behavior and external locus of control in explanations of own behavior (life course as a concatenation of external circumstances).

Additionally, the low indexes of Life Strategy show incapacity to be aware of life as a prolonged consecution of own's achievements.

(5) Degree of Confidence in Life Causality

The index of Confidence demonstrates the level of rigidity in understanding of events causes and potentiality to change the personal plans according to circumstances.

The results analysis demonstrates that the patients suffering from opioid-related disorders have high indexes of Confidence in the existence of goal and causal connections between significant life events or total absence of such connections. In our opinion it points to inflexibility of behavior based on a single meaning of life events causality without taking the changeable conditions of life.

(6) Degree of Life Satisfaction

The index of Life Satisfaction demonstrates the level of satisfaction of the most significant events of life.

In spite of the above facts of drug addicts' time disorganization we did not find significant differences in Life Satisfaction between patients and control group. This finding reflects that drug addicts gave positive estimations of one's own life as it is. A few hypothetical interpretations of this fact are possible: (a) drug addicts are generally satisfied with their lives regardless of treatment progress; (b) acute withdrawal was treated successfully enough to make them satisfied with their lives; (c) the elements of time

² The indexes described below (4 to 6) were measured based on the results of LL procedures *Goals & Causes* (selective analysis) and refers to the personal understanding of connectivity between life events (Kronik, 2002).

oriented therapy included in LL assessment resulted in the patients' level of life satisfaction.

B. CRITERION OF THE DISEASE SEVERITY

(1) Experience Quotient

This criterion demonstrates characteristic features of changing time experience according to two factors of the disturbance complication:

- (a) Duration of the disturbance in chronological time,
- (b) Age when opioids were used first time.

The formula of this quotient is $EQ = D/A \ 100\%$, where EQ is experience quotient, D is duration of disturbance in years, and A is chronological age. EQ reflects which part of total biographical time duration of drug use takes.

Three groups of respondents were completed based on Experience Quotient. The analysis of patients with low, average and high levels of EQ reveals the differences of the LL-indexes of Rationality and Motivational Intensity. The patients with highest EQ have demonstrated the lowest level of these indexes.

Additionally, we completed three groups of respondents according to the differences of duration of drug use. The patients with longest time of drug use demonstrate the lowest estimations of eventfulness in current five years and the lowest Subjective Life Expectancy.

(2) Attitude to Recovery

Two groups of patients were completed in accordance with fact of presence (N=21) or absence (N=18) of the event "recovery from dependence" in LL results. (Two patients refused to indicate significant life events.) We found, that the patients who didn't mention "recovery from dependence" as significant expect to live less than other patients (see Table 2). Additionally, they estimated own life as consequence of periods of fullness and emptiness of important events (high index of "average change of estimations"). This phenomenon could be named *serration in the life graph*.

Table 2. AFP indexes in two patients groups (differed by presence/absence of the event “recovery from dependence”) and in control group.

AFP indexes	Absence N = 21	Presence N = 18	Control group N = 22
Average change of estimations	1.6*	1.1	1.0
Subjective life expectancy (years)	57.4***	60.8**	73.9

Significance of differences between patients and control: *p < 0.1, **p<0.05, ***p<0.001

C. PRACTICAL USE

(1) Diagnostic Objectives.

LL procedure *Assessment of Five-year Periods* (AFP) can be used as a brief assessment test (takes about 5-10 min) of current psychological state in accordance with experience of own biographical time. Additionally, using the *Experience Quotient of Drug Use* (EQ) may be helpful for quick testing for psychological complications of the disturbance.

The complete LL-assessment may be used for careful analysis of patient’s time experience and working out the individual psychotherapeutic approach.

(2) Therapeutic Objectives

Based on results we suggest the following therapeutic objectives which should be achieved in treatment for opioid-related disorders:

- (a) *Breadth of personal orientations in time.* Therapeutic enrichment of patient’s outlook on his/her life span and reconstruction of future perspectives.
- (b) *Life as consecutive achievements.* Recognition of life as integrity, understanding of motivational connections between different parts of biographical time.
- (c) *Fullness and significance of life in present.* Realization of importance and positive meaning of current period for all life course.

D. SCIENTIFIC PERSPECTIVES

- Cross-cultural researches in this field.
- Research of time experiences in cases of different kinds of chemical dependence.
- Research of temporal semantics and unconscious components of drug users' inner model of time with projective tests (images of time).
- Research of time experiences in cases of controlled drug use (e.g., Methadone programs)
- Research on the effectiveness of the time-oriented therapies for substance related disorders (future-oriented psychotherapy, timeline therapy, time-oriented computer-assisted psychotherapy).
- Research for ways of combining time-oriented therapeutic techniques with other methods exploitable in this field (NA, AA, CA, individual or group psychotherapy).

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