Information technologies for resocialization of minors convicted of drug crimes

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Abstract. The serious concern of many specialists, who deal with the problems of drug addiction, regarding counteracting the spread of drug addiction among juvenile population and establishing the efficient targeted informational influences on underaged drug users and drug criminals for their social (psychological and pedagogical support) prompted the Author to write this Article. The article deals with both traditional, worldwide known rehabilitation approaches to drug addicted teenagers, and fundamentally new methods that take advantages of the digital environment. The Author paid particular attention to the analysis of the positive changes that (thanks to IT technologies) contributed to the formation of anti-drug attitudes, constructive motivation, and legal behavior skills of deviant minors who participated in the experiment. The Author also presented the data on psychological testing, that demonstrated the dynamics of empirical response of the adolescent in course of restoring their self-control and self-regulation, awakening their willingness to gaining new knowledge, to becoming successful and creative members of the information society. The Author comes to the conclusion that the digital environment can either destroy a child or form his/her positive attitudes, constructive motivation, readiness to give up drugs, to reintegrate, as well as serve as a tool that gives advice and signals to the appropriate specialists about the successful recovery of a client or (on the contrary) about a sudden deterioration of his/her condition (crisis, breakdowns, etc.).

1 Introduction

Work aimed at correction of adolescents with various forms of drug addiction, at their readaptation, at the restoration of their lost functional ties with others, at the formation of skills of constructive, law-abiding behavior, etc. is extremely difficult, because such work has its own specific features that make it very different compared to the rehabilitation of other categories of criminals with mental deviations. We have to mention that drug addicts are (especially during the period of abstinence) angry, cynical, and aggressive; they readily make promises and never keep them. However, the main problem is that adolescent drug addicts very rarely recognize themselves as sick people, they turn down any qualified help avoiding a long-term treatment (the official scientific sources call this phenomenon anosognosia).

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The strategies followed by social workers, psychiatrists-narcologists, initiative members of anti-drug organizations should be safe, contribute to the creation of an atmosphere of complete trust, partnership, and also provide for the ability to cope with extraordinary situations that inevitably arise during close communication with a deviant adolescent. As the practical experience of many specialists shows, the following methods of influence are most efficient in rehabilitation work - information, suggestion, training, coordination and control, manipulation. For today’s teenagers, it is very important that the curator has prestige with them, has extensive life experience, behaves sincerely, respectfully, and, shoes digital competence (which, perhaps, is one of the main requirements by their standards). Virtual reality attracts drug addicts no less than psychoactive substances.

There is a great variety of government, public and commercial structures dealing with drug addicted adolescents, moreover such variety is constantly being changed and updated. At the same time, we have all reasons to assert that the entire external variety of anti-drug practices is limited by the willing of their developers to solve the following problems:

1. to make a teenager consciously quit drugs of his/her own accord;
2. to minimize (and, if possible, completely block with medication) his/her craving for drugs;
3. to normalize his/her somatic and psychophysiological state, his/her emotional background;
4. to ensure conditions for his/her full-fledged social adaptation; 5) to motivate his/her reintegration into society.

However, without IT technologies it will be very hard to implement such a scenario, especially in the context of total digitalization of social, financial, economic, labor, and educational relations.

Now, let's turn to the publications that caught our attention. First of all, we should point out the works of sociologists and social workers who reveal the importance and urgency of the problems associated with drug addiction, as well as demonstrate the specifics of drug use in different countries together with the socio-economic and medico-social consequences of drug addiction. For example, reliable information sources from the USA report that, having barely crossed the threshold of the second millennium, the American nation faced an unprecedented growth of various pathological addictions to psychoactive substances. In a number of states drug overdose deaths (natural opiates and synthetic drugs) tended to grow by about 16% annually. American authors assert that the juvenile strata of the population, including minors, being mostly affected by such epidemic. Furthermore, a significant feature of the drug epidemic of the 21st century was identified, i.e., according to scientists, there are no clear differences in the intensity of drug use based on racial, ethnic, gender, social, or educational characteristics [1, 2].

Some publications alert that medical institutions are experiencing serious difficulties in connection with the influx of drug addicts. A significant number of people in need of emergency care are admitted to the hospital too late, when time has already been lost and resuscitation measures happen to be useless. Thus, we are facing a crisis that hit the system of medical and social services for drug addicts. According to some researchers, we cannot talk today about the observance of the principles of complexity, continuity, interaction, or high professionalism in the field of the primary care and subsequent rehabilitation [3, 4].

Let's summarize what has been said. The topic of the Article appears to be extremely relevant, since the problem of modernizing the currently existing inert and insufficiently effective system of assistance to deviant teenagers (prone to drug use and highly criminal activity) needs to be resolved as soon as possible.
2 Materials and methods

98 teenagers expressed their wish to participate in the experiment, as well as efficiently cooperate with the working group members. These were young men (78 persons) and girls (20 persons) aged 16 to 18 years who regularly used drugs, stored, acquired, distributed, and processed psychoactive prohibited substances. Facing the specifics of the issues being considered, we have to make some clarifications. The study was conducted from August 2018 to August 2022 at the facilities of social centers in St. Petersburg and the Leningrad Region. After the verdicts were announced, the said 98 persons underwent a course of detox therapy and took the initiative to contact the members of the working group.

The purpose of the study is largely associated with an attempt to prove the need for implementation of IT technologies for rehabilitation and resocialization of juvenile drug criminals, therefore well-known, tested and demanded methods in various fields of scientific knowledge were used (i.e., logical and system analysis, observation, interviews, clinical and psychological testing, analysis of information contained in official documents, social networks, scientific publications and methodological guidelines) for the rehabilitation of deviant teenagers who lead antisocial and use/distribute drugs. The diagnostic techniques were as follows: scales for determining R. Phillips' anxiety (SAS), which make it possible to judge the presence of stressful factors in the life of a teenager, the degree of their danger and subjective significance for the rehabilitator and the Leonhard-Shmishek questionnaire, on the basis of which the type of personality (accentuations) of a teenager is determined.

Moreover, to have a clear idea of the mental state, emotional background, general psychological mood of each rehabilitated individual (rehabilitant), we used the Self-Assessment Questionnaire of a Drug Addicted Teenager, which allowed to identify and record the complaints, claims, and needs of patients, their fears, panic attacks, depressive and suicidal thoughts, together with the positive aspects due to improved and enhanced adaptive mechanisms.

The works of world-famous scientists devoted to the nature of individual and social consciousness, human life, social activity, mechanisms of motivation, issues of personality formation formed the methodological and theoretical foundation of the study.

3 Results

In our study we paid uppermost attention to psychological testing and, primarily, to control the level of anxiety of the teenagers (which changed throughout the experiment). The point is that anxiety is a specific marker for the psychophysiological balance, an indicator of the subjective well-being (or, on the contrary, of imbalance, or disharmony), it also serves as one of the most reliable criteria for the success, adequacy and expediency of the measures being resorted to. Psychological testing with the use of scales for determining R. Phillips' anxiety (SAS) was carried out three times, i.e., at the initial and final stages of rehabilitation, as well as one year after completion of the rehabilitation measures. We show the results of the study in the table below; the results demonstrate the dynamics of the indicators of the anxiety level for 98 drug-addicted deviant teenagers convicted of drug offenses (Table 1).

The data obtained reveal a certain drop in the digital values of anxiety indicators on all scales of the SAS methodology (in particular, we see that the indicators of general anxiety, frustration, resistance to stress factors by the time patients were discharged from rehab centers were two times decreased). Such dynamics is clear evidence of neutralization of maladaptive factors, the normalization of emotional response, the stabilization of the central nervous system, and the restoration of cognitive functions. In turn, the success of resocialization is also evidenced by one more drop in indicators recorded a year after the
completion of the program. On average, the values of most indicators (as compared to the initial figures) decreased by approximately two times.

**Table 1. Dynamics of anxiety indicators.**

<table>
<thead>
<tr>
<th>№</th>
<th>Anxiety factors</th>
<th>Indicators of anxiety at the initial stage of rehabilitation</th>
<th>Indicators of anxiety at the final stage of rehabilitation</th>
<th>Indicators of anxiety one year after completion of the rehabilitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General anxiety</td>
<td>49.9±2.12</td>
<td>22.0±0.11</td>
<td>20.3±1.24</td>
</tr>
<tr>
<td>2</td>
<td>Social related stress</td>
<td>46.6±4.91</td>
<td>35.2±3.76</td>
<td>30.1±4.09</td>
</tr>
<tr>
<td>3</td>
<td>The frustration of the need to succeed</td>
<td>48.7±4.19</td>
<td>20.3±1.41</td>
<td>18.4±2.02</td>
</tr>
<tr>
<td>4</td>
<td>Fears of self-expression</td>
<td>43.9±5.81</td>
<td>28.4±2.33</td>
<td>20.1±1.07</td>
</tr>
<tr>
<td>5</td>
<td>Fear of situations associated with extra control</td>
<td>44.9±3.29</td>
<td>26.1±1.09</td>
<td>11.3±2.01</td>
</tr>
<tr>
<td>6</td>
<td>Fears associated with possible loss of authority</td>
<td>49.7±2.15</td>
<td>25.7±3.98</td>
<td>20.1±1.08</td>
</tr>
<tr>
<td>7</td>
<td>Low resistance to stress factors</td>
<td>48.7±5.17</td>
<td>20.9±6.24</td>
<td>19.1±1.51</td>
</tr>
<tr>
<td>8</td>
<td>Fears caused by difficulties in communicating with the curator</td>
<td>46.9±4.98</td>
<td>20.1±3.37</td>
<td>10.7±1.73</td>
</tr>
</tbody>
</table>

An exception being the scales № 5 and № 8, where the values show four times decrease. At the same time high values on the scale №2 (negative emotions by being stigmatized) caused a certain concern for our specialists. This circumstance was the reason why our specialists thought it expedient to conduct one more training on the tactics for establishing proper interpersonal relationships.

We used the Leonhard-Shmishek questionnaire to identify and assess the personality traits of drug addicted teenagers. Making typology compilation of drug addicted teenagers, we kept in mind clear gender differences between tested individuals, which determine the specifics of their behavior, reflection, and the dynamics of mental processes. The results of our study are reflected in Table 2.

**Table 2. Comparison results of the individual/personal characteristics of the male and female minors who took part in the study (the Leonhard-Shmishek questionnaire).**

<table>
<thead>
<tr>
<th>№</th>
<th>Types of accentuated personalities</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hyperthermic</td>
<td>16.4±0.06</td>
<td>18.9±0.21</td>
</tr>
<tr>
<td>2</td>
<td>Excitable</td>
<td>17.5±0.32</td>
<td>19.1±0.27</td>
</tr>
<tr>
<td>3</td>
<td>Emotive</td>
<td>10.1±1.01</td>
<td>13.0±0.99</td>
</tr>
<tr>
<td>4</td>
<td>Pedantic</td>
<td>6.4±0.75</td>
<td>7.2±0.67</td>
</tr>
<tr>
<td>5</td>
<td>Cyclothymic</td>
<td>14.8±0.21</td>
<td>18.0±0.09</td>
</tr>
<tr>
<td>6</td>
<td>Demonstrative</td>
<td>16.3±0.03</td>
<td>19.8±1.01</td>
</tr>
<tr>
<td>7</td>
<td>Unbalanced</td>
<td>20.0±0.02</td>
<td>13.9±0.24</td>
</tr>
<tr>
<td>8</td>
<td>Dysthymic</td>
<td>16.8±0.92</td>
<td>17.7±1.07</td>
</tr>
<tr>
<td>9</td>
<td>Exalted</td>
<td>7.06±1.04</td>
<td>12.4±1.78</td>
</tr>
</tbody>
</table>

As Table 2 shows, the obtained results are characterized by high values on all scales, except two scales (№ 4 and № 9). Thus, we can see practically same low values of indicators on scale №4 (which contains information about the criteria for the pedantic type) for boys and girls. The revealed circumstance demonstrates that as a rule drug addicted teenager do not seem to try or (for the most part) are merely not able to complete the started business, showing irresponsibility, and indecision (especially when constructive decisions are to be
made). When analyzing low values on the scale №9 (exalted type), we, primarily, should pay attention to the fact that for females they are still 1.8 times higher than for males. This means that exaltation (high impressionability, enthusiasm) is not a hallmark of drug addicted teenagers, while the difference in digital values is due to the specifics of female psychology, i.e., girls may have some romantic hobbies, they are emotional more experienced, more often showing pity, sympathy (although, sometimes they can be soulless, cynical and cruel). Such specificity also explains the prevalence of hysterical traits in the female population (of varying severity). Quite often hysteria is equated with demonstrativeness. In our study, demonstrativeness indicator (on a scale of № 6) is $19.8 \pm 1.01$ for girls, being equal to $n = 16.3 \pm 0.03$ for drug addicted boys; thus, the difference is obvious and amounts to $3.5 \pm 0.98$.

Unbalanced behavior, as a character trait, is typical of many drug addicts, and we can find it both autonomously (isolated) and in close connection with other accentuations, for example, with a cyclothymic or with an exalted personality type. Coming back to gender characteristics, we can concentrate on the analysis of the psychological profiles of the tested individuals. The results show that the most significant differences are found on scales 3, 5, 6, 9. Moreover, a number of regularities can clearly be seen. Thus, clinical profiles demonstrate that for drug-addicted boys, the socio-psychological degradation and maladjustment are less brutal (in other words, less malignant) than for girls. Nevertheless, girls, for the most part, are more inventive, initiative, and mobile. In our study it is girls (rather than boys, as one could expect) who demonstrate hyperthymic and excitable character traits, which shows their tendency to affects together with aggressiveness (see profiles corresponding to scales № 1, 2, 7, 8). Very unfortunately, drug addicted girls (especially those with hyperthymic properties) use their energy for criminal purposes, i.e., for organizing and committing thefts, for frauds, pimping, sexual exploitation of weaker girls.

Before finalizing the results of the study, we should emphasize that throughout the whole rehabilitation and resocialization process, each tested individual regularly visited a social center, a narcological dispensary, a criminal enforcement inspectorate, and also met periodically a police officer (who supervised him/her). On weekends, social workers visited homes, where the teenagers lived. At least twice a week, the teenager was tested for the content of psychoactive substances in urine. No relapses were recorded during the period under consideration (10-12 months). The only nuance was that at different time intervals up to 17 individuals turned to a psychiatrist/narcologist with a request to be relieved of sudden urges to use drugs.

As further events showed, after being discharged from the social center, the tested individuals were spontaneously distributed into the following four groups:

- **Group I.** 48% (47 individuals, including 42 young men and only 5 were girls) most successfully completed a course of treatment, rehabilitation, and resocialization.

- **Group II.** 26% (25 individuals, including 22 young men and 3 girls); these individuals realized that they were not confident enough to live independently and asked for one more course of re-socialization measures.

- **Group III.** 16% (15 individuals, including 9 boys and 6 girls); within the first three months after being discharged from the social center they were hospitalized in narcological hospitals due to drug overdose.

- **Group IV.** 10% (11 individuals, including 5 boys and 6 girls). Immediately after the completion of the rehab course, they changed their place of residence and interrupted communication with our specialists. Nothing is known about them now. Most likely, they lead an anti-social and vagrant lifestyle.

The available statistics on remissions and relapses for drug addicts vary greatly. On average, we can observe both short (up to six months) and long-term positive changes with complete rejection of drugs for 27% - 30% of drug addicts (here we talk about those
individuals who consciously, on their own accord, turned to special rehab institutions, rather
than about all drug addicts).

Rehabilitation methods that we used in our practice with deviant teenagers deserve special
attention. Let us clarify, first of all, that rehabilitation-resocialization phenomenon was based
on the concept of a systemic psycho-therapeutic and socially-oriented approach to the
personality of a drug addict. The comprehensive psychosocial support program included both
traditional methods (counseling, participation in self-help groups, in psychological and
pedagogical events, and group trainings) and newly developed digital methods. For example,
so-called 12-step programs, were delivered online, so that Narcotics Anonymous
communities from all regions of the Russian Federation, as well as from Belarus and Latvia
could participate. Each teenager was keeping an electronic self-report diary, and its excerpts
(with the author's permission) were discussed at special sessions and posted on social
networks. Role-playing games (including those in electronic format) enabled to simulate
various scenarios of behavior/emergency situations as well as create efficient algorithms to
make a teenager think and act independently and creatively in various situations.

Eleven individuals managed to master remotely (on-line) the 9th grade school program
and entered colleges to obtain IT specialty. 27 individuals managed to cope with Instagram
and were actively involved in the digitalization of contemporary art, regularly posting their
artworks on social networks. They exhibited some of their paintings online in the account of
the Cube Moscow Gallery and sold them successfully to customers. Within the period of one
year 34 individuals were successfully trained with accelerated programs at various Advanced
Professional Development Centers (which are aggregator websites meeting WorldSkills
standards). It is IT-Cube network of digital learning centers (created within the frameworks
of the Education national project) that was especially popular among rehabilitants; this online
environment gave teenagers a chance to develop their abilities in science, art and sports.

Thus, our results confirm the initial idea that information technologies in rehabilitation
work with drug addicted teenagers (to achieve faster and better psychotherapeutic effect,
stable remission, and develop adaptive capabilities) trigger in a teenager the
mechanism of critical evaluation of his behavior, which makes him/her realize what
he/she is supposed to do in life to be successfully reintegrated into society.

4 Discussion

Any discussion related to the issues and the results of this study is inevitably conventional by
nature, since we deal with a very unique category of individuals. We did not merely
contemplate them in terms of the diagnostic results, we also made them involved into
resocialization activities with new IT technologies. Unfortunately, we could find no scientific
papers, where authors would have even tried (at least hypothetically) to discuss what would
happen to a juvenile drug addicted criminal in the information society, and/or describe
authors’ visions of the ways of possible digital reintegration.

Still, there are certain touchpoints that deserve our attention. For instance, A. Rundio
(2018) confirms our observations of how young opium addicts contact the outside world, of
the ways such specificity is manifested in their addictive behavior, delinquency, teenagers’
rebelliousness. Unfortunately, socio-psychological determinants of drug use were not
considered, nothing was said about a typology of opium addicts, while resocialization aspects
were also left out of the scope of the publication [5].

We focused in our study on juvenile drug addicts who committed minor crimes (e.g.,
illegal drug trafficking), not considering the entire criminal activity spectrum of drug
addicted teenagers. Unlike us, this was done by our Chinese colleagues, who demonstrated
that the use of drugs, street prostitution, crimes, and violence are the links of the same chain
that can be broken be means of early criminological preventive measures and implementation
of public anti-drug psycho-correctional programs (the specificity of which was not disclosed). We also had the opportunity to find confirmation of our own results, i.e., doctors from Beijing pointed out the important role of anxiety indicators both in the delinquent behavior of drug addicts and during the process of their rehabilitation (resocialization) [6]. We have to note that Chinese law enforcement officers, doctors and social workers consider in detail the issues of how preventive, restorative and punitive measures taken against drug addicts correlate with each other (such issues being discussed intensively for many years in the Russian Federation). G.Y. Gu and H. Zhong (2021) declare that in theory nothing can be more reliable and efficient than early prevention measures, but in reality, the authorities in China have to resort to programs based on isolation and rigid coercion of drug addicts to rehab treatment, study, and work (although, experts consider such methods not very productive) [7]. We have to state in this context that violence and repression cannot be used to defeat the disease. Moreover, as we already mentioned, rehabilitation is impossible without a voluntary decision of a drug addict (i.e., no motivation - no recovery).

C. Juannys C. Esmerlis and P. Javier (2018) turn to family of a deviant teenager in search of additional rehabilitation and resocialization resources. Apart from being fully justified, such a measure is quite vital [8]. But in our case, only 30% of parents (relatives) were really interested in the teenager's recovery, i.e., they came to interviews with specialists, did not use any psychoactive substances themselves, and attended 12-step program sessions. The worldwide analysis of the positive effect in training groups shows that the relations in the families of those being treated in rehabs get quickly and steadily normalized after they complete their rehab courses [9]. Many authors report that during group sessions internalization and externalization symptoms typical of drug addicts and their relatives (e.g., painful experiences such as anxiety, fear, depression, somatic disorders) successfully disappear [10]. R.A. Bosso et al. points out that it is very important to solve domestic and housing problems for proper resocialization of a drug addict, and we are in complete solidarity with him (2021) [11].

We have to admitted that in fact we did idealize the role of the digital environment for resocialization paying no attention to specific danger of some problematic computer networks, that promote the use and distribution of drugs (nor did we mention the fact that quite obviously teenagers with gambling addiction should have no access to the Internet resources). Threats related to darknet web services have been reported by many authors [12]. At the same time, it is interesting to note that, for example, English teenagers and college students tried a drug for the first time in the company of their peers or older friends, which means that there were imitative, playing and group motives dominating with them [13]. All these features of drug addicted teenagers were clearly confirmed by the results of our study. We should fully agree with D.T. Cooper and J.L. Klein (2018) who assert that the period of growing up is the most important in a person's life, since it largely determines the entire course of further socialization. The authors come to the conclusion that the teenager's persistent involvement in deviant activity requires immediate intervention of parents, tutors, etc., since it can lead to social maladjustment, drug addiction and have far-reaching, adverse consequences [14].

Due to the high latency of many manifestations of drug addiction we are not aware of the true extent of drug use and the prevalence of chemical dependence among teenagers. Quite often statistics are used as means of various manipulation, which make D.M. Kazemi, S. Li, M.J. Levine, B. Auten and M. Granson (2021) suggest that people working in the field of rehabilitation, resocialization, and those fighting drug trafficking should make use of smartphone applications overview to see the real situation with drugs (in the country, region, etc.) [15]. We want to test this technique in our future research.
5 Conclusion

Digital environment (being consciously, purposefully, and constructively used) contributes greatly to achieve a positive psychotherapeutic effect and consolidate remission for drug addicted criminal teenagers; it helps formation of a stable adaptive potential, and in overcoming stigmatizing. With the results of the study, we have all reasons to assert that information and communication technologies open up great opportunities (in terms of communication and self-realization) for all participants, both directly in the process of rehabilitation and after completion of a rehab course. It seems that widespread implementation of innovative methods, digital technologies, etc., for the purpose of rehabilitation and resocialization of drug addicts, will be a starting point for having the entire system of drug treatment and social services for drug addicts renewed and modernized.

References