

Impact of dual diagnosis in patients with schizophrenia and affective disorders during hospital treatment on the course of illness and outcomes of treatment – a preliminary report

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Summary

Aim: Comparison of the course of illness and functioning as well as occurrence of somatic diseases between patients with dual diagnosis, alcohol or drug addiction without mental disorders and patients with schizophrenia or affective disorders; drawing attention to the problems of people with dual diagnosis and importance of longer psychiatric inpatient treatment of this group of patients.

Method: 108 persons were examined during inpatient psychiatric treatment. Injuries, occurrence of somatic diseases, aggressive behaviors, suicidal attempts, and discharges from hospital on patients' request against medical advice were evaluated. Sociodemographic data and data associated with the course and treatment of an illness were compared between dual diagnosis group ($n = 30$), group of patients with mental illness ($n = 41$) and patients with alcohol or drug addiction ($n = 37$) using questionnaires designed by the authors.

Results: In the dual diagnosis (DD) group, patients more often tried to commit suicide, started to use drugs or alcohol in younger age. In this group significantly more people were before marriage or after divorce. In the DD group and the group of patients with mental disorders (C), there were significantly more patients treated in hospitals longer than 180 days during their life. No statistically significant differences were found between groups when comparing incidence of somatic diseases, injuries, discharges from hospitals on patients' request or aggressive behaviors.

Conclusions: Due to non-compliance, frequent interruption of treatment, higher suicidal risk in the dual diagnosis group, there is a need of longer inpatient treatment in order to improve mental status, regular pharmacological treatment, provide social support, motivation, and prepare patients for psychotherapy of addiction. It is essential to take actions to create therapeutic standards of treatment and adjust financial funding for this group of patients in Poland.

Key words: dual diagnosis, substance use dependence, substance use disorder

Introduction

Dual diagnosis (DD) is a clinical term which describes co-occurrence of a mental disorder and disorders associated with psychoactive substance abuse (PS) in the same person [1, 2]. There is a necessity of separation of this group of patients both from patients treated psychiatrically and those treated for addiction. It results from multiple diagnostic and therapeutic difficulties such as: problems with differentiation of symptoms of mental illness from disorders associated with psychoactive substance abuse, lack of compliance among people with DD in psychiatric as well as rehab treatment, homelessness, lack of community support, aggression, breaking the law, lack of uniform standards for treating patients with DD.

This is a non-homogenous group to which one can equally include persons diagnosed with persistent mental illness, personality disorders and anxiety disorders [3–5]. During the last several decades many studies have been conducted in the world which confirm that people with DD constitute about 30–40% of addicted people and 16–50% of mentally ill people [6–10]. Patients with DD obtain in studies worse outcomes of treatment, they are hospitalized more often, show more aggressive behavior, commit suicide trials more often, more frequently become homeless, and their symptoms of mental illnesses are more severe and resistant to treatment [7, 10–14]. These studies concern various groups of patients treated both on outpatient basis and in inpatients departments. They involve people with various diagnoses of mental and personality disorders.

The importance of factors like: abuse of PS, poor compliance in treatment, rare contacts with medical centers in the course of development of the risk of violence, aggression and breaking law by mentally ill persons abusing PS is emphasized [8, 13]. However, there are few analyses comparing functioning and treatment of patients diagnosed with schizophrenia and affective disorders abusing and non-abusing psychoactive substances with people who are only addicted, all of which are treated in a closed general psychiatric ward in Polish population.

In 2013, a group of authors of this article published the outcomes of a research concerning medical documentation of people hospitalized psychiatrically between 1994 and 2005 and pointed out that about 30% of people with addictions showed symptoms of mental illnesses and 8% people hospitalized psychiatrically had symptoms of dual diagnosis [7]. Multiple clinical observations indicate low efficacy of treatment, aggression, breaking the law, noncompliance during treatment, problems with starting and maintaining therapy by the patients with DD. These force professionals to take some action in order to improve care and treatment of people with DD [5, 9, 10, 12, 15–21]. In the literature, the problem of persecution of people with DD and troubles associated with it are highlighted – it creates the necessity of adjusting therapeutic programs for prophylaxis purposes [22].

In Poland, there is a significant problem of shortage of places where long-term therapy for both mental illness and dependency could be held. Therefore people with

DD are very often rehospitalized in general psychiatric wards due to exacerbation of symptoms of mental disorders or complications associated with alcohol or other PS dependence. A too early discharge of patients with DD from psychiatric wards (before remission of the symptoms of illness) is observed due to active symptoms of dependence or discharge of people with active mental illness from rehab centers because of lack of conditions and possibility to treat psychotic disorders, which constitute obstacles to use various forms of dependence treatment (including psychotherapy) [7, 12, 16, 19].

There are scientific data regarding differences in the DD group between patients with bipolar disorder (BD), unipolar depression (UD) and schizophrenia. It has been pointed out that age of patients with schizophrenia and PS dependence is lower in comparison to patients with DD suffering from depression. Examined people with DD suffering from schizophrenia had lower level of education in comparison to people with BD. Moreover, patients with DD and BD less common suffered from somatic diseases in comparison to others. There was a research in which people with DD and depression constituted a group with the highest mean age and more often continued work, but also more often suffered from additional somatic diseases. The worse functioning of patients with schizophrenia abusing PS in comparison to people with DD and BD has been described [23]. In other articles, more frequent usage of new stimulants in the DD group with bipolar disorder has been pointed out [24].

Clinical observations and conducted research point to problems encountered by people with DD. The most difficult problem seems to be the noncompliance in treatment, aggression, suicidal attempts, lack of social support, homelessness, and lack of means of self-maintenance. Studies concerning patients with DD and character of co-occurring disorders and a way of functioning of this group can lead to improvement of treatment conditions and change in standards of therapeutic procedures, especially taking into consideration the need of longer period of treatment and organization of medical and social support.

Aim

The aim of the study was to compare the course of an illness and functioning of patients with the diagnosis of mental illness (schizophrenia or unipolar or bipolar affective disorder), addiction and a double diagnosis (illness and addiction). The occurrence of somatic diseases and injuries in the studied groups was also assessed.

This work is an introduction to several years of prospective observation of the studied groups of patients

The following research hypotheses were formulated:

H1: Patients with DD have a more severe course of the illness, require longer hospitalizations, more often show aggressive behaviors, more often undertake suicidal attempts, and suffer from somatic diseases more frequently.

H2: DD patients more often than other groups live alone, do not have a permanent employment, require aid from state institutions (labor offices, social welfare centers)

Methods

Three groups of patients were formed from persons hospitalized in a closed psychiatric ward in Tarnowskie Gory between 2014 and 2016: (1) patients diagnosed with paranoid schizophrenia (F20) or unipolar and bipolar affective disorder (F30–F33) – 41 people; (2) patients with a diagnosis of psychoactive substance dependence (F10–F19 except for addiction to tobacco and benzodiazepines) – 37 people; and (3) patients with a double diagnosis – with the diagnosis of addiction and mental illness (schizophrenia or affective disorder with psychoactive substance dependence, except for tobacco and benzodiazepines) – 30 people. Diagnoses of paranoid schizophrenia, affective disorders and PS dependence were established according to ICD-10 criteria.

The study was conducted using original questionnaires, surveys containing information about the duration and the course of the current illness/addiction, duration of treatment, history of psychoactive substance use, information concerning the occurrence of mental illnesses in the family, suicidal attempts, hospital discharges on patient's demand, aggressive behavior, occurrence of significant accidents, head injuries, loss of consciousness, additional somatic diseases, information concerning the source of income, professional activity, current social situation.

The study included people who:

- signed an informed consent to participate in the study;
- were over 18 years old;
- were hospitalized between 2014 and 2016.

Whereby:

- diagnosis of paranoid schizophrenia (F20), unipolar affective disorder (F32, F33), bipolar affective disorder (F30, F31) and lack of data indicating harmful usage or addiction to psychoactive substances (except for tobacco and benzodiazepines) – qualification to the study group of persons with mental illness without addiction (C – control group);
- diagnosis of co-occurrence of mental illness: paranoid schizophrenia (F20), unipolar affective disorder (F32, F33), bipolar affective disorder (F30, F31) with psychoactive substance dependence (F10–F19), except for tobacco and benzodiazepines – qualification to a group of people with double diagnosis (DD);
- diagnosis of psychoactive substance dependence (F10–F19), except for tobacco and benzodiazepines addiction – qualification to the group of addicted people (A).

Withdrawal or lack of consent to participate in the study were exclusion criteria.

The course of the illness was assessed on the basis of the total length of the current (from the diagnosis of the illness) hospital treatment and the number of hospitalizations, the frequency of the occurrence of aggressive behavior in the interview and documentation of individual patients, suicidal attempts, and discharges from hospitals despite medical recommendations. Sociodemographic data were analyzed and compared between groups. The occurrence of somatic diseases and injuries in particular groups was examined.

The analysis used the following statistical methods: χ^2 test, Wilcoxon test, Kruskal-Wallis test, Mann-Whitney test with Benjamini-Hochberg and Bonferroni corrections. The level of statistical significance was considered at $p \leq 0.05$.

The Bioethical Commission of the Medical University of Silesia issued the decision of KNW/0022/KB1/149/14 dated 16.12.2014 on the lack of contradictions for conducting this study.

Results

The study began in December 2014, 108 people, who finished hospital treatment and were referred for further treatment in an outpatient clinic, agreed to participate in it. Among people who consented to participate in the study, men prevail. Three research groups were created: (1) double diagnosis group (DD) – people with a double diagnosis of mental illness and addiction, consisting of 30 people; (2) group of addicts (A) – 37 people diagnosed only with alcohol and other psychoactive substances addiction; (3) control group (C) – patients with a diagnosis of mental illness, 41 people. Sociodemographic data and the course of the current treatment of the patients were analyzed.

Table 1. Sociodemographic data of the three compared groups of patients

	A GROUP (N = 37)	DD GROUP (N = 30)	C GROUP (N = 41)
Mean age	41.2	38.1	42.8
	Number of patients (%)	Number of patients (%)	Number of patients (%)
Male sex	31	29	38
Female sex	6	1	3
Married	12 (32.4%)	4 (13.3%)*	16 (39%)
Single	25 (67.6%)	26 (86.7%)*	25 (61%)
Primary education	7	7	3
Vocational education	20	6	6
Secondary education	8	11	19
University education	2 (5.4%)	5 (16.7%)	13 (31.7%)

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Full-time job, own business	18 (48.7%)	9 (30%)	15 (36.6%)
Disability pension	1 (2.7%)	10 (33.3%)	14 (34.2%)
Retired	0	2	2
Financially supported by the family	12 (32.4%)	7 (23.3%)	8 (19.5%)
Social welfare/unemployment benefit	6	2	2
Somatic diseases	14 (37.9%)	9 (30%)	16 (39%)
Accidents and injuries with a loss of consciousness	12 (32.4%)	7 (23.3%)	8 (19.5%)
Living with family	31 (83.8%)	22 (73.3%)	33 (80.5%)
Living alone	6 (16.2%)	8 (26.7%)	8 (19.5%)
The mean age at starting treatment	34.2*	28.5*	31
The number of patients hospitalized over 180 days	4 (10.8%)	14 (46.7%)*	17 (41.5%)*
The number of patients hospitalized up to 30 days	13 (35%)*	2 (6.67%)	7 (17%)
The average number of hospitalizations	4.4	4.9	5.6
Aggressive behavior	11 (29.7%)	15 (50%)	14 (34.1%)
Suicidal attempts	6 (16.2%)	16 (53.3%)*	15 (36.6%)
Discharge on patient's request	8 (21.6%)	11 (36.7%)	12 (29.3%)

*– statistically significant result ($p \leq 0.05$)

There were no statistically significant differences between groups regarding age ($\chi^2 = 2.25$; $df = 2$; $p = 0.33$). There was a difference between groups regarding mean age at starting treatment ($\chi^2 = 6.28$; $df = 2$; $p = 0.04$). Patients in the DD group started treatment statistically significantly earlier compared to the A group ($p = 0.048$). The sex ratio between groups was not analyzed due to low number of females who agreed to participate in the study. In the DD group, there were statistically significantly more unmarried or divorced people (87%) compared to the C (61%) and A (68%) groups, and significantly less married people (13%) compared to the other groups: C (39%) and A (32%). Somatic diseases as well as injuries and accidents did not occur statistically more frequently in the DD group in comparison to other groups ($p = 0.7$). In the group of addicts (A), there was statistically the highest number of people (35%) whose duration of all hospitalizations did not exceed 30 days in total compared to

other groups (DD 6.7%; C 17%; $p = 0.01$). In the DD and C groups, there was statistically the largest number of people whose total duration of all hospitalizations exceeded 180 days ($p = 0.01$), whereas there was no significant difference between the DD and C groups.

There were no significant differences between the groups in terms of the number of patients who were in total hospitalized more than 8 times, similarly the average number of hospitalizations in individual groups did not differ statistically ($\chi^2 = 1.63$; $df = 2$; $p = 0.44$). Patients who were addicted without an additionally diagnosed mental illnesses were hospitalized shorter, however, the number of re-hospitalizations did not differ between the study groups.

In the group of people with double diagnosis (DD), patients statistically significantly more often attempted suicide (53.3%; $p = 0.005$) compared to the C (36.6%) and A (16.2%) groups. Discharges from hospitals at patient's own request ($p = 0.39$) and the occurrence of aggressive behaviors did not differ significantly between groups ($p = 0.21$). In the DD group, statistically more people under 20 years of age started to abuse PS in comparison to the A group.

In the A group, there were statistically more people whose source of income was full-time job or own business (48.7%) than in the DD (30%) and C (36.6%) groups. Disability pension benefits were significantly more frequent in the group of the mentally ill and the DD group – one third of patients in these groups – in comparison to addicted persons. There was no statistically significant difference between the groups in terms of the number of people living alone, in the DD group, however, the number of those patients was the highest (26.7%) in comparison to the A (16.2%) and C (19.5%) groups. All groups did not differ regarding level of education.

Table 2. **Statistical data concerning the age of onset of psychoactive substance abuse in the DD and A groups**

Factor level	Minimum	10%	25%	Median	75%	90%	Maximum
DD	13	14	15	17	20.75	37.1	43
A	9	13.8	17	20	30	40.2	49

Means and standard deviations

Factor level	Number of people	Mean	Standard deviation	Standard error of the mean	Lower endpoint of the 95% confidence interval	Upper endpoint of the 95% confidence interval
DD	30	20.2308	8.29124	1.6260	16.882	23.580
A	37	24.2703	9.65415	1.5871	21.051	27.489

Wilcoxon / Kruskal-Wallis Tests (Rank sums)

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Factor level	Number of people	Rank sum	Expected rank sum	Rank mean	(Mean-Mean0)/Standard_deviation0
DD	30	786.35	832.000	26.2115	-2.099
A	37	1334.50	1184.00	36.0676	2.099

2-sample test, normal approximation

S	Z	Prob> Z
681.5	-2.09887	0.0358*

1-Way Test, ChiSquare Approximation

Chi-Square	Degrees of freedom	Prob>Chi-Square
4.4347	1	0.0352*

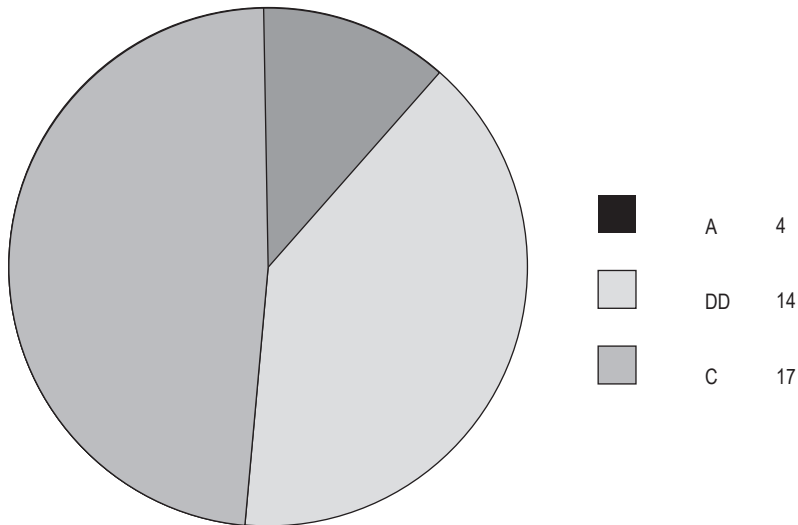


Figure 1. The number of patients in the examined groups treated in the hospital during different periods of life over 180 days

In the DD group, 22 people were diagnosed with schizophrenia (73%), 8 people (27%) – with unipolar and bipolar affective disorders BD (4 patients with UD, 4 with BD). In the C group, 19 patients were diagnosed with schizophrenia, 12 people – with BD and 10 people – with UD.

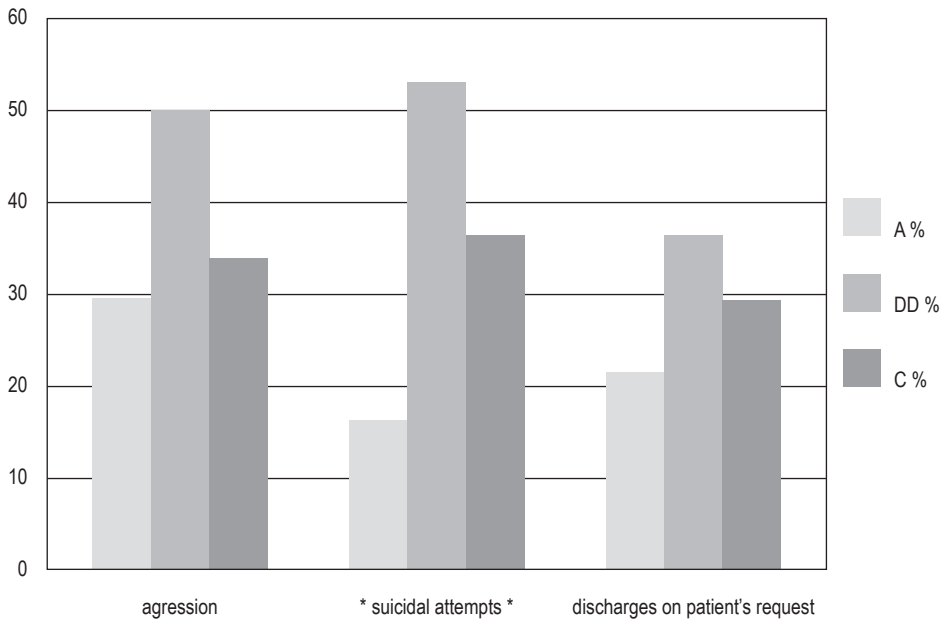


Figure 2. The course of the illness in different groups

Discussion

The results of this study are preliminary because all three groups are being selected for a two-year prospective study. After this period of time reanalysis of health condition, functioning and treatment of these people is planned.

While assessing the overall course of treatment and functioning of persons in each group through analysis of the length and number of hospitalizations, frequency of discharge from hospitals on patients' request, presence of aggressive behavior and suicidal attempts in the interview and documentation, and describing the source of income, having job and family, no direct outcomes indicating worse functioning and course of illness in the DD group were found. These outcomes significantly differ from the observations described in 2013 and observations from other studies [7, 16, 25, 26]. The main cause of these differences between current study and other articles is insufficient number of people in examined groups and the results basing on interviews conducted in person and examinations of patients in contrast to previous reports where only medical documentation was analyzed [7]. Other authors include to DD groups also the patients with diagnoses other than schizophrenia and affective disorders, which affects the obtained results.

In our research published in 2013 [7], it was stated that people with dual diagnosis were statistically longer hospitalized, more often rehospitalized, more frequently

discharged from hospitals without medical permission, more frequently exhibited aggressive behavior, and more often attempted suicide; similarly to the present study, no differences between groups were found when it comes to the frequency of occurrence of somatic diseases as well as injuries. Similarly to the current study, the group of addicted persons without co-occurring disorders more often had full-time job and less often used other forms of aid like social help and disability pension. It is important to pay attention to the fact that there is a clearly higher frequency of suicidal attempts in the DD group, which is consistent with the results of other authors. Statistically higher number of unmarried people in the dual diagnosis group is also underlined, like in other research [5, 16, 18, 25, 27, 28]. In the research of Chakraborty et al. from 2014 [29], there are no differences between groups when it comes to the risk of suicidal attempts, however, we should focus here on cultural factors and greater family support. In the research published by Perez et al. [5], as in the present study, it was shown that the age of PS use onset in the DD group was lower in comparison to persons addicted to PS without co-occurring mental illnesses and mentally ill people not abusing PS.

It is emphasized that the ability to, e.g., maintain job and employment may be the indicator of mental stability [30]. Therefore, taking into account factors such as having job and employment, living alone or with the family, showing aggressive behavior, and the number of hospitalizations one can try to compare the functioning of a given person in a social group. In the current study all these factors did not differ statistically between groups. However, the limitations of this work, i.e., small groups, only inpatients included in the study, should be borne in mind. All examined persons were the patients of the closed psychiatric ward, which may not reflect certain features of this group (outpatient treatment was not included).

Patients with dual diagnosis much more frequently discontinue treatment and begin to reuse PS, which results in exacerbation of the symptoms of the illness and higher suicidal risk [5, 13, 16, 18, 21, 27, 28, 31–33]. For these reasons attention should be paid to the need for a longer period of inpatient psychiatric treatment of people with DD before referring them to the rehab. The special needs of patients with DD require the creation and implementation of uniform and adapted to the treated disorders standards of therapy, and a number of treatment centers adequate to the needs. Moreover, the problem of omitting the phenomenon of co-occurrence of mental illness and addiction is also highlighted in the literature [4, 31, 33]. De Waal et al. [22] draws attention to the greater risk of persecution of people with DD in the society, that is why preventive measures should be taken. It has been pointed out that correctly diagnosed DD and suitable treatment and support allow to improve the functioning of this group of patients [33].

Considering the length and number of hospitalizations as well as the source of income, the results in the DD group were comparable to the control group (C) of mentally ill persons without addiction. The analysis of the occurrence of somatic diseases

as well as accidents and injuries did not show any significant differences between groups. Due to the great diversity of examined DD groups in the literature, the results are different: some researchers observe a higher frequency of gastrointestinal diseases among people addicted to alcohol in the DD group in comparison to patients with mental illnesses without addiction [34], other scientists [25, 28] reported higher frequency of occurrence of somatic diseases in the DD group in comparison to the addicted people (A), but in comparison to the mentally ill people not using PS the frequency of somatic diseases in the DD group was lower [25]. In the work of Perez et al. [5], DD psychiatric inpatients were examined and sociodemographic and clinical factors were analyzed. It was shown that 69% of people were unmarried and 90% had a low economic status, and that most common factors associated with DD diagnosis were: age 18–35, male sex, aggressive behavior, psychiatric rehospitalizations up to one year after a discharge from a hospital. Similar results were obtained in the current study.

In the study by Charzyńska et al. [35], 69% of people from the DD group were married, 80% lived with a family. The study covered patients hospitalized for more than 48 hours, but persons with the history of intensive violence were excluded, what was most probably the reason of discrepancies. More patients with DD in this study were married probably because the majority of diagnoses were related to mood disorders, whereas in other studies and in the current work the DD group included more people diagnosed with psychotic disorders.

The results of this study are influenced by the number and type of comorbid mental illnesses. A large percentage of patients diagnosed with schizophrenia in the DD group may contribute to differences in the observed results, e.g., lower percentage of married, self-reliant and financially independent people. In other works [7, 18, 35], it was shown that patients with comorbid mood disorders and PS dependence constitute the majority of DD groups and the nature and the course of a given mental illness, its intensity and type of psychopathological symptoms, are the main predictors of the occurrence of dysfunction in contact with other people and independent functioning. It should be remembered that in the present work only patients diagnosed with schizophrenia or affective disorders (unipolar or bipolar) were qualified to the DD group. A huge part of people with DD described in other works suffered from stress-related mood disorders and personality disorders, which significantly influenced the assessment and results of functioning of the entire DD group.

The main limitation of this work is a relatively small number of people in all groups, which makes it impossible to properly compare the outcomes with the literature and makes us unable to conduct an additional analyses of, e.g., possible differences concerning DD between patients suffering from schizophrenia and affective disorders.

Conclusions

1. In the group of mentally ill people (C) and people with DD, there are statistically more patients with longer periods of psychiatric hospitalizations.
2. Suicidal attempts occurred significantly more frequently in the group of patients with dual diagnosis.
3. The frequency of occurrence of aggressive behavior and discharges from hospitals on their own request did not statistically differ between the mentally ill, addicted people and persons with DD.
4. Somatic diseases and accidents did not happen more frequently in the DD group.
5. In the group of dual diagnosis, there are significantly more single or divorce people and significantly fewer married people.
6. In the group of patients with dual diagnosis, there are statistically fewer employed people in comparison with addicted people without comorbid mental illnesses.

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