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# THE COMORBIDITY OF SCHIZOPHRENIA AND ALCOHOL: FROM COGNITIVE DESTRUCTION TO SOCIAL ISOLATION

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### *Abstract*

**Problem statement:** There are several recent articles focusing on the comorbidity of schizophrenia - alcohol consumption use. We try to find new approaches to patients diagnosed with these two psychiatric pathologies. **Research Questions:** How can we quantify how each one of these two pathologies contribute to the onset or evolution of the other? **Purpose of the Study:** Alcohol consumption increases the risk of occurrence of schizophrenia, as the patient consumes alcohol to cope with negative symptoms, so that the two pathologies subsequently contribute to non-compliance to treatment. **Research Methods:** review of the specialty research, DSM 5, ICD 10, pharmacological studies. **Findings:** In order to understand why an alcohol consumer will develop schizophrenia or other psychological disorders, other factors such as family history, education level, environment, etc. should be considered. The comorbidity of these pathologies thus leads to deterioration in the cognitive and social functioning, lower treatment compliance, a worse financial situation, a significant decrease in life quality, and aggressive behavior. **Conclusions:** Going beyond the limitations of these studies, over the many hypotheses formulated or over the variables they take into account, we can, however, argue with certainty that alcohol dependence is an essential prognostic negative factor in patients diagnosed with schizophrenia, leading to a more difficult diagnostic, a higher number of hospitalizations and more severe illness episodes.

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**Keywords:** Schizophrenia, alcohol consumption, comorbidity, cognitive functioning.



## 1. Introduction

In spite of the fact that this comorbidity is one of the most common psychiatric diseases, at present, very few working hypotheses can be supported. Early diagnosis of the two psychiatric pathologies is therefore essential in the patient's evolution.

A significant number of recent clinical studies that refer to this diagnosis are entirely justified, because there are numerous uncertainties regarding the causes of the two pathologies, their onset, and the effects of one disease symptomatology on the other disease. This is very important especially when establishing a therapeutic plan.

Undoubtedly, this comorbidity leads to symptoms of a higher intensity, compared to those who are diagnosed with only one of the two mental disorders.

The quality of life, the capacity for social reintegration, the costs involved in diagnosing and treating these patients, have major implications for public health and social assistance systems.

In this context, it is obvious the need to identify the existing deficiencies at all the aforementioned levels and to offer new methods of approaching patients with this comorbidity.

The risk behavior is one of the central points, both in the evaluation and diagnostic phase. Also we need to focus on preventing the recurrence of the risk behavior.

The limits of the selected researches are numerous, but the accomplishment of this meta-analysis offers precisely the possibility to compare the relevant studies that test similar hypotheses of this comorbidity and to compare the obtained results, thus reducing as much as possible the methodological errors.

Our scientific perspective has come precisely from the necessity of the existence of an alternative approach to evaluate and treat patients with this pathology.

## 2. Problem Statement

Within this scientific approach, the most relevant theories are synthesized which, through clinical studies performed with respect to methodological rigor, try to provide a series of explanatory models.

There are a number of recent, complex studies that, in addition to the common attempt to determine the percentage of patients with schizophrenia-alcoholism comorbidity, focus on extremely varied aspects of this issue.

The interest shown by the researchers in this subject is the proof that this double diagnosis represents a real challenge for all involved in the field of mental health.

Therefore, through the most relevant studies, we note that this double diagnosis is found in the case of a percentage that varies between 35% and 80% of the psychiatric population (Leposavić, Dimitrijević, Dorđević, Leposavic, & Balkoski, 2015).

One aspect that we observe as constant in these studies is the behavior of these patients, as well as the consequences they have on the subsequent mental state.

Thus, patients diagnosed with schizophrenia and alcoholism develop a behavior that can be characterized by: marked aggression, interruption of psychiatric treatment and suicide attempts (the latter

being more violent more manifestation, compared to those used by depressive patients or those who are only dependent on substances) (Holmstrand, Bogren, Mattisson, & Brådvik, 2018).

The behavior of patients with this comorbidity is precisely the proof of the serious consequences that the two major mental disorders have on the patient. Thus, a vicious circle is created, in which the abuse of alcohol hastens the occurrence or causes the exacerbation of a psychotic episode, and the patient, in his attempt to diminish the positive and negative symptoms, will consume alcohol.

In addition, this comorbidity will lead to a significant reduction in the patient's ability to be critical about the disease. In the absence of insight, there is a failure to treat the disease. The patients systematically refuse to follow treatment, as they do not notice their own pathological behavior (Trifu, Carp, & Nadoleanu, 2017).

Thus, patients frequently experience severe cognitive disorders, psychomotor agitation, aggression, affective disorder, disorganized language, marked by delusional, sometimes bizarre (Connor, 2015).

In many cases, the psychiatric reevaluation of patients with this double diagnosis occurs precisely in the context of excessive alcohol consumption, a situation that may lead to the emergence of risk behavior manifested towards the others or the patient itself.

Another aspect that has worried many researchers and which is closely related to the ones mentioned above, is the way of relating with these patients.

By summarizing the selected studies, we can conclude that both schizophrenia and alcoholism lead to a social withdrawal which, in general, gradually worsens, to a significant diminution of coping skills or the ability to understand the role that social assistance may play in the process of improving the patient's condition. All these obviously lead to a decrease in the quality of life (Bahorik, Greeno, Cochran, Cornelius, & Eack, 2017).

Gradually, amid the aggravation of the symptom's characteristic of both disorders, the capacity for social functioning will be reduced significantly and irreversibly.

The need to develop a complex and personalized therapeutic plan, which takes into account many variables such as socialization skills, patient's financial resources, presence or absence of risk behavior, insight capacity, family climate, resilience, is a major challenge for mental health specialists (Holmstrand, Bogren, Mattisson, & Brådvik, 2018).

Particular attention has been paid to the beneficial effects of reducing alcohol consumption in patients diagnosed with schizophrenia. Certainly, trying to prevent the occurrence of alcohol dependence or other substances in schizophrenic patients would have a major positive impact, but, as various studies state that, in most patients, alcohol consumption begins before a psychotic disorder (Conner, 2017).

In addition, the presence in the hereditary-collateral history of alcohol consumption is frequent, which increases the risk of developing this pathology (Kerner, 2015).

Alcohol is responsible for the deterioration of neurotransmitters, those that play a major role in achieving affective, cognitive and motivational-volitional processes (Connor, 2015).

If a deterioration of cognitive function was predictable, in double-diagnosed patients, compared to healthy persons, it was surprisingly found that only slightly more pronounced deterioration was in patients with double-diagnosis, compared to those diagnosed only with schizophrenia (Connor, 2015).

Even though, on the background of alcohol consumption, psychotic episodes will intensify, studies have shown that the alcohol consumption has no effect on the efficacy of the antipsychotic treatment administered (Mohamed, 2015).

We tried to build up a profile of the person who will develop this comorbidity. At the end, it resulted a profile, largely common, that we can synthesize as follows: he is male, young, the members of the family of origin have dependence on alcohol or other substances, he has grown up in a conflictive family climate, which it did not allow him to develop a type of secure attachment or effective coping strategies (Leposavić et al., 2015).

### **3. Research Questions**

The multitude of research hypotheses formulated in these studies (which either have been mutually validated or have given conflicting results) demonstrate that the subject is an important one, but difficult to approach.

In trying to reach the goals of this meta-analysis, which we presented above, we will formulate the most relevant working hypotheses. Their variety is given both by the different theories from which they start, as well as by the different aspects that they intend to investigate. So:

(1) We assume that there is a significant association between alcohol dependence and the development of a psychotic disorder.

(2) We assume that suicidal behavior is the most common pathology among the psychiatric population with comorbidity.

(3) We assume that there is an association between schizophrenia-alcoholism comorbidity and impaired cognitive function.

(4) Suppose that we can build up a profile of the patient which will develop this comorbidity in a certain period of time.

(5) Suppose that alcoholism causes a lower compliance in patients with double diagnosis, compared to those diagnosed only with alcoholism.

(6) Suppose that patients with double diagnosis have a history of alcohol-related side effects of alcohol dependence.

(7) Suppose that patients with double diagnosis have a hereditary-collateral history of psychotic disorders.

(8) Alcohol consumption is a consequence of the social isolation of the schizophrenic patient.

### **4. Purpose of the Study**

The present paper is a meta-analysis of the most relevant studies concerning the schizophrenia-alcoholism comorbidity and aims to present, in a structured way, the most relevant working hypotheses, as well as the conclusions offered.

It is thus trying to build up a profile of the patient who will develop this comorbidity, as well as identifying the main consequences that a superficial approach of the patients with this double diagnosis can have.

Thus, the aim is to offer management suggestions of the difficulties raised by meeting a patient with this comorbidity.

## 5. Research Methods

The present paper aims to be a meta-analysis of the most recent and most significant articles dealing with schizophrenia-alcoholism comorbidity. The relevance of the selected articles is given by the number of patients involved, by the variety of research methods, by the differences between patients (socio-cultural educational, age, presence or absence of hereditary-collateral history, gender), but also by the existence of numerous hypotheses and the variables they formulated.

Numerous questionnaires were used to help assess the level of aggression, the level of cognitive, affective functioning, substance dependence, coping methods they have, the type of attachment they have developed.

The tools used were:

- PANSS, with the three scores calculated separately
- Mini International Neuropsychiatric Interview - Plus (MINI-PLUS)
- Hamilton to investigate the intensity of depression
- YMRS for investigating the presence of dysphoria
- GAFS for social functioning
- IADL or other scale for investigating quality of life
- ASI (Addiction Severity Index)
- Michigan Alcohol Screening Test (MAST)
- Dementia Assessment Scale (MODA)

Particular attention was paid to the presentation of the methodology used, the sampling strategies and the inclusion and exclusion criteria existing for the different studies

## 6. Findings

In the present paper we set out, on the one hand, to offer, with the help of relevant and recent studies selected, a solid theoretical support for future research in the field, and on the other hand to propose an alternative method of working with patients who suffer from this comorbidity.

Specifically, I have synthesized the answers regarding the most important aspects concerning this problem, we have reviewed the hypotheses, we have specified the diagnostic tools used, I have described the limits of the research.

We have made a number of recommendations that could guide mental health specialists working with patients diagnosed with this comorbidity.

The literature finds that the criteria for alcohol dependence is present at: patients with personality disorder, in 24% of patients with adaptation disorders, in 22% of patients with depression, in 18% of patients with anxiety disorder, in 11-50% of patients with schizophrenia, in 9% of patients with bipolar disorder. The differences between epidemiology data come from different diagnostic criteria and variant diagnostic tools used by researchers. The percentages are probably even higher for high-risk groups, such as young people with a violent or homeless history. In most geographical areas, alcohol is the most common

substance for abuse (except nicotine) in patients with schizophrenia, and alcohol abuse is correlated with poor adaptation and prediction of adverse events such as hospitalization, incarceration, etc.

In patients with dual diagnoses (schizophrenia and substance use), high rates of substance use disorders were found in patients in first- and second-degree relatives, suggesting that genetic risk factors for substance use disorders and a family environment adversity could have contributed to their onset and severity. Even though the risk of comorbid substance use disorder in schizophrenia patients is well known, insufficient efforts have been made to study the relationship between family history of psychosis and substance use disorders in schizophrenia patients.

Different studies show that genetic risk factors for schizophrenia and substance use disorders (including alcohol) could not be independent, and this conclusion is supported by multiple other studies in the literature.

Schizophrenia and alcoholism are characterized by abnormalities of brain volume. Despite the frequent comorbidity of these disorders, the potentially complicated effects of comorbidity on brain structure have rarely been rigorously evaluated. Despite lower exposure to alcohol than pure alcoholism, the comorbidity of schizophrenia with alcoholism has a particularly profound effect on the volume of prefrontal cortex, combining the prominent prefrontal deficits present independently in schizophrenia and alcoholism.

Bratu and Soptorean (2014) from the Central Military Clinical Hospital, Bucharest, Romania published in "Clinical neuropharmacology" a comparative study between Naltrexone and Acamprosate concluding that Naltrexone was effective in reducing the overall symptomatology of alcohol dependence, while the Acamprosate increased the number of abstinence days. The study was performed on 36 patients (mostly men - 24) with schizophrenia and comorbid alcohol dependence, the evaluation being done with PANSS (severity of psychotic symptoms), GAF (daily functioning) and IDTS (Inventory of Drug Taking Situations), evaluation on a period of 24 weeks.

In the same institution, a group of doctors led by D. Vasile again emphasized the efficiency of Naltrexone, this time making a comparison with Disulfiram. The number of patients was 20 and was also limited to 24 weeks.

Martyna Sawicka and Derek K Tracy (????) performed a systematic review of published studies (3879 studies) on the use of Naltrexone in patients with schizophrenia and alcohol dependence. In addition to underlining the fact that Naltrexone is effective and safe in the treatment of this symptomatology, he highlighted several limitations of the studies analysed by them, of which we mention:

- stabilizing antipsychotic medication, as a result of impairing dopaminergic reward systems, positively influences the results of Naltrexone study
- it was not possible to control (evaluate) the psychosocial assistance subsequent to the hospitalization, although there were studies which showed that without psychosocial support the consumption of alcohol was significantly reduced
- the studies were performed especially on male patients (87%) - the literature indicates that the results at Naltrexone do not differ according to sex
- in some studies the patients were chosen from specific groups (veterans, Africans, etc.) without for example doing an ethnic stratification - thus the results are limited to those subgroups studied

- in multiple studies a control group was not included - compromised external validity
- lack of consistency between studies which does not allow for a meta-analysis

The limitations mentioned above require at least longer-term studies to highlight maintaining the long-term effect of Naltrexone, studying dysphoria (as an adverse effect of Naltrexone administration - its increase), studying the interaction of psychotropic medication in parallel with Naltrexone administration (although it is assumed that this does not negatively influence antipsychotic medication (few studies on this topic), risk analysis and suicidal behavior as a result of the combination medication.

Naltrexone appears to be more effective on people carrying a mutation in the OPRM1 gene of the mu opioid receptor (A118G). The secondary analysis of the COMBINE study found that the group of patients who received the medication plus Naltrexone and carried the OPRM1 mutation, nearly doubled the proportion of patients with "good clinical outcomes" (from about 50% to about 90%). 1 in 10 African-Americans, one in three Caucasians and one in two Asians carry the OPRM1 mutation.

Naltrexone has a real benefit in treating patients with double diagnosis (schizophrenia - alcoholism).

(a) Relapses and their intensity are lower in patients treated with Naltrexone compared to those not receiving this treatment

(b) Coping mechanisms developed by patients receiving Naltrexone are more durable and more mature

(c) The affective state of the patients receiving Naltrexone is superior in terms of stability compared to the period when they did not receive this treatment.

#### 6.1. Results focused on the benefits of Naltrexone

\* Patients with double diagnosis resort to alcohol consumption in attempt to cope with the negative symptoms prior to the manifestation of a psychotic episode.

\* Patients with double diagnosis in whose treatment scheme is included also Naltrexone have fewer relapses, as it helps to maintain the state of euthymia.

\* The use of Naltrexone in the treatment scheme leads to decreased risk of alcohol consumption and implicitly to increased compliance with treatment.

\* The use of Naltrexone leads to a decrease in craving.

\* The decrease in craving due to the use of Naltrexone leads to the improvement of the psychotic episode's intensity within the schizophrenia.

\* The decrease in craving is a consequence of the reduction in intensity of the psychosis (the diminution of craving is thus secondary to the diminution of the psychosis).

\* Patients who have Naltrexone included in the treatment scheme develop more efficient coping mechanisms, this medication contributing to diminishing the intensity of the positive and negative symptoms of psychosis.

\* Patients with double diagnosis have a history of hereditary-collateral dependence on alcohol.

\* Patients with double diagnosis have a hereditary-collateral history of schizophrenia or other psychotic disorders.

\* Alcohol consumption is a consequence of the social degradation and environment where the schizophrenic patient lives.

\* Patients following a treatment regimen including Naltrexone have a lower number of aggressive / hetero-aggressive manifestations compared to those not following this treatment.

\* Relapses in alcohol abuse are greater for men compared to women.

\* Educational and socio-professional status influences the number of relapses (alcoholism and psychotic episodes)

\* The use of Naltrexone is more effective in patients with lower cognitive impairment.

## 7. Conclusion

Beyond the limits of the mentioned studies, however, we can formulate a series of alternative variants of approaching patients with this comorbidity. Also, there can be formulated new research possibilities.

Thus, it is significant the association between alcohol dependence and the development of a mental illness (about one third of cases).

The overlap of alcoholism over a psychotic disorder has negative consequences on treatment compliance, social reintegration capacity, quality of life and, above all, life expectancy.

Therefore, this comorbidity requires a significant and constant effort from those involved in the evaluation, diagnosis, treatment and monitoring process. It is absolutely necessary that any therapeutic plan of a patient with a psychotic symptomatology should also include the treatment of alcohol / drug addiction, etc.

## References

- Bahorik, A. L., Greeno, C. G., Cochran, G., Cornelius, J. R., & Eack, S. M. (2017). Motivation deficits and use of alcohol and illicit drugs among individuals with schizophrenia. *Psychiatry Res.*, 253, 391-397. <https://doi.org/10.1016/j.psychres.2017.04.012>.
- Bratu, E. R., & Soptorean, G. A. (2014). Comparison of the efficacies of naltrexone and acamprosate in the treatment of patients with chronic schizophrenia who are alcohol dependent. *European Neuropsychopharmacology*, 24(1), 71-72. [https://doi.org/10.1016/S0924-977X\(14\)70080-X](https://doi.org/10.1016/S0924-977X(14)70080-X)
- Holmstrand, C., Bogren, M., Mattisson, C., & Brådvik, L. (2018). First and Subsequent Lifetime Alcoholism and Mental Disorders in Suicide Victims with Reference to a Community Sample-the Lundby Study 1947-1997. *Front Psychiatry*, 9, 173. <https://doi.org/10.3389/fpsy.2018.00173>
- Kerner, B. (2015). Comorbid substance use disorders in schizophrenia: a latent class approach. *Psychiatry Res.*, 225(3), 395-401. <https://doi.org/10.1016/j.psychres.2014.12.006>
- Leposavić, L., Dimitrijević, D., Đorđević, S., Leposavic, I., & Balkoski, G. (2015). Comorbiditatea utilizării nocive a alcoolului în populația de pacienți schizofrenici [Comorbidity of harmful use of alcohol in population of schizophrenic patients]. *Psychiatria Danubina*, 27(1), 84-89.
- Trifu, S., Carp, E. G., & Nadoleanu, A. (2017). Alcohol as a substitute, mask of depression and "antidote" of narcissism. *European Proceedings of Social and Behavioural Science*, 31, 986-994. <https://doi.org/10.15405/epsbs.2017.10.94>