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Prevalence of major depressive disorder in people with chemical addiction*

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Objective: to verify the prevalence of Major Depressive Disorder in people with chemical dependence. **Method:** cross-sectional study with the application of the structured interview for the DSM-V disorders in 183 individuals admitted to therapeutic communities for chemical dependents, located in the south of Santa Catarina, during the year 2019. **Results:** All participants did not have a psychiatric consultation when entering the institution and the majority did not have a regular psychiatric consultation (94.5%). It was found that 89 participants (55.3%) had diagnostic criteria for Major Depressive Disorder and 59.1% of these had alcohol addiction (p<0.028). **Conclusion:** the diagnosis of depressive disorder should be consolidated as an important variable for the effectiveness of treatment, since its prevalence is high and has repercussions on the quality of treatment and time of institutionalization.

Descriptors: Depressive Disorder, Major; Substance-Related Disorders; Epidemiology; Rehabilitation.

Prevalência do transtorno depressivo maior em pessoas com dependência química

Objetivo: verificar a prevalência do Transtorno Depressivo Maior em pessoas com dependência química. **Método:** estudo transversal com a aplicação da entrevista estruturada para os transtornos do DSM-V em 183 indivíduos internados em comunidades terapêuticas de acolhimento para dependentes químicos, localizadas no sul de Santa Catarina, durante o ano de 2019. **Resultados:** todos os participantes não realizaram consulta psiquiátrica ao ingressar na instituição e a maioria não realizou consulta psiquiátrica regular (94,5%). Constatou-se que 89 participantes (55,3%) possuíam critérios diagnósticos para o Transtorno Depressivo Maior e 59,1% destes possuíam adicção ao álcool (p<0,028). **Conclusão:** o diagnóstico do transtorno depressivo deve-se consolidar como uma variável importante para a eficácia do tratamento, visto que sua prevalência é elevada e possui repercussões sobre a qualidade do tratamento e tempo de institucionalização.

Descritores: Transtorno Depressivo Maior; Transtornos Relacionados ao Uso de Substâncias; Epidemiologia; Reabilitação.

Prevalencia del trastorno depressive major en personas con adicción

Objectivo: verificar la prevalencia del transtorno depressivo major en personas con adicción. **Metodo:** estudio transversal con aplicación de la entrevista estructurada para los transtornos del DSM-V en 183 personas internadas en comunidades de tratamiento de adicción en el departamento de Santa Catarina durante el ano de 2019. **Resultados:** la totalidad de los pacientes no realizaron cita con psiquiatra al ingressar en las instituiciones y la mayoria no realiza visitas regulares al psiquiatra (94,5%). Se observó que 89 participantes (55,3%) tenian critérios diagnósticos para depressión y 59,1% de ellos eram adictos al alcohol (p<0,028). **Conclusión:** el diagnóstico del transtorno depressivo debe consolidarse como una variable importante para la eficácia del tratamiento, pues su prevalencia es elevada y pose repercursiones sobre la calidad del tratamiento y el tiempo de permanencia en las comunidades.

Descriptores: Trastorno Depresivo Mayor; Transtornos Relacionados con Sustancias; Epidemiologia; Rehabilitación.

Introduction

The identification of Major Depressive Disorder (MDD) in people with chemical dependence is important both for the prognosis and for the planning and development of appropriate behaviors, because its concomitance can modify the signs and symptoms of each comorbidity, increasing the number of inappropriate and inefficient therapeutic interventions[1-2].

Although there has been an increase in research on depressive disorders in people with chemical dependence in Brazil, there are few studies that have investigated this issue[1]. A survey, carried out in the State of Rio Grande do Sul, verified the frequency of psychiatric comorbidities in chemical dependents and dared, among its results, that 16.1% of the selected population met diagnostic criteria for MDD[3].

Add to this phenomenon the high number of addicted individuals underdiagnosed with psychopathological conditions, which increases the amount of damage related to the underlying disease, because the subject with MDD, for example, may become more limited in seeking help or understanding their disease[2,4]. Based on the magnitude of the above-mentioned phenomenon, it is necessary to investigate the prevalence and characteristics of patients with double diagnosis (chemical dependence/depression) in the southern region of Santa Catarina, because the incorrect management of these individuals, besides promoting a worsening in the quality of life of these individuals and their families, generates a high social cost[5-6].

Likewise, reliable epidemiological data are needed to support the development and/or updating of public policies aimed at solving this phenomenon. In turn, the objective of this study was to verify the prevalence of MDD in people with chemical dependence interned in therapeutic communities located in southern Santa Catarina.

Method

A cross-sectional study was conducted in two Therapeutic Communities for the Reception of Chemical Dependents (TCCDs), located in the south of Santa Catarina, between the months of July and December 2019. Through a sample calculation performed at the Platform (OpenEpi) to obtain the 95% confidence interval, 1-alpha error of 5% and type II error of 20%, the ideal number of participants was 183.

The TCCDs were held for an audience of 702 inmates. Of these, 602 volunteered, and 543 met the initial requirements (more than 29 days of hospitalization, adults under 60 years of age and children, not previously diagnosed with schizophrenia). Of these, 183 participants for the research were raffled off by electronic application.

The first step was the collection of individual variables (not directed to verify the psychological dimension of the participants), which was done through a self-administered questionnaire. The instrument was made by the researchers and maintained all the ethical precepts of the Helsinki declaration. To ensure that it was easy to understand and understand the participants, a pre-test was performed with the research group, comparing it to two other data collection instruments with similar objectives and content.

At the same time, the Structured Clinical Interview for DSM-5 Disorders (SCID-V-CV)[7] by psychologists specialists in psychological evaluation, with the items E1 - E36: Disorders of the use of alcohol and other substances - Dependency on Alcohol and Other Drugs to evaluate the variable "presence of chemical dependency". The questions were directed at gauging frequency of consumption, associated problems, concern about the use by the proximal social circle, harm in performing expected tasks, unsuccessful attempts to cease or reduce use, feeling of compulsion, among others[6]. This interview lasted an average of 30 minutes and was carried out individually in a closed room.

The interview with SCID-V-CV (items E27/E34: disorders of the use of alcohol and other substances - abstinence) continued with the objective of discarding a possible state of intoxication or abstinence. This procedure aimed to avoid the bias of confusion between the negative symptoms of mood arising from the state of abstinence/detoxification with those of MDD. Participants identified with a state of abstinence/intoxication did not proceed to the next steps of the study.

To avoid confusion between negative mood symptoms due to deprivation of liberty or another psychiatric medical condition other than MDD, items A45 - A64 of SCID-V-CV (distymic disorder/mood disorder due to a general medical condition) were applied. Participants identified with altered mood status due to other causes did not proceed to the next steps of the study. Subsequently, the variables "prevalence of Major Depression Disorder" were evaluated using SCID-V-CV, items A1 - A12 (current MDD). With this interview, the presence of depression was identified.

The analysis of the findings was performed as follows: the data obtained from the questionnaires were tabulated in a database of the statistical software SPSS (Statistical Package for Social Sciences), version 21. The qualitative data were presented in total numbers, percentage (%), while the quantitative data were expressed by mean and standard deviation and minimum, maximum and range values.

For comparisons between qualitative social variables, Pearson's chi-square test was applied to determine the frequency of occurrence. For the quantitative variables,

the t-Student test was used to compare patients with and without MDD and Pearson's correlation to verify the association between the quantitative variables. The level of significance determined was p≤0,05. The total number of participants allowed statistical analysis to have a 95% confidence interval and 80% study power.

This project was submitted to the Research Ethics Committee in accordance with Resolution 510/16, respecting the anonymity of the participants and the permission of the institution under study. The data collection was carried out after approval by the Research Ethics Committee (REC/UNISUL: 3,442,587 - CAAE: 09833119.9.0000).

Results

Characterization of participants

The individual and social variables of the participants, referred to in the self-administered questionnaire, are described in Table 1, quantitative variables, and Table 2, respectively.

Table 1 - Quantitative variables referred to in the self-administered questionnaire related to hospitalization (n=183). Criciúma, SC, Brazil, 2019

	Minimum	Maximum	Amplitude	Average	Standard Deviation
Age (years)	18	59	41	37.08	10.79
Length of hospitalization (days)	30	271	259	87.78	57.60
Age at the beginning of use (years)	10	27	17	14.03	2.23
Number of hospitalizations	1	12	11	5.235	2.887

Table 2 - Qualitative variables referred to in the self-administered questionnaire (n=183). Criciúma, SC, Brazil, 2019

	n	%
Religion		
Agnostic	6	3.3%
Atheist	3	1.6%
Catholic	151	82.5%
Protestant evangelical	23	12.6%
First degree relatives with chemical dependence		
Yes	22	12.0%
No	161	88.0%
Psychiatric consultation upon entry		
No	183	100.0%
Regular psychiatric consultation		
Yes	10	5.5%
No	173	94.5%
Marital status		
Single	158	86.3%
Married	16	8.7%
Stable Union	9	4.9%
Education		
Illiterate	4	2.2%
Elementary school	36	19.7%
Highschool	137	74.9%
Higher education	6	3.3%

When evaluated the association between the age of beginning of drug use and the number of hospitalizations, as well as the age of beginning of drug use and length of hospitalization, there were no statistically significant results (r= 0.028, p = 0.76, and r = -0.022, p = 0.75, respectively).

SCID-V-CV Structured Interviews

The evaluation of substance use disorder, analyzed through SCID-V-CV, showed that 156 participants (84.7%) were diagnosed with alcohol use disorder as the main problem, while 16 (8.6%) were for crack addiction and 12 (6.5%) for cocaine addiction.

Regarding the severity of alcohol dependence, the data showed that 135 participants (87.1%) had severe alcohol use disorder, 11 participants (6.7%) had moderate alcohol dependence and ten individuals (6.2%) had mild alcohol use disorder.

Some psychological conditions can course with symptoms similar to MDD and sometimes, if not precisely diagnosed, can be confused with it. To avoid a bias of confusion, the exclusion of these pathologies with SCID-V-CV has been performed. It was identified that 21 participants (11.5%) had distant disorder and seven (3.8%) were in a period of abstinence, that is, in most of the participants of the survey (84.7%), the possible biases mentioned above were excluded.

Once the patients with a diagnosis of chemical dependence and who were not in a period of abstinence or with a depressed mood due to isolation were identified, the interview was carried out, which evaluated the presence of MDD, in which it was found that 89 participants (55.3%) had diagnostic criteria for MDD and 72 (44.7%) did not confirm such a diagnosis.

Of these, four crack addicted participants, six cocaine addicted participants, and 81 alcohol addicted participants were found to have a diagnosis of MD, with a statistical association only between alcoholism and depression, as shown in Figure 1.
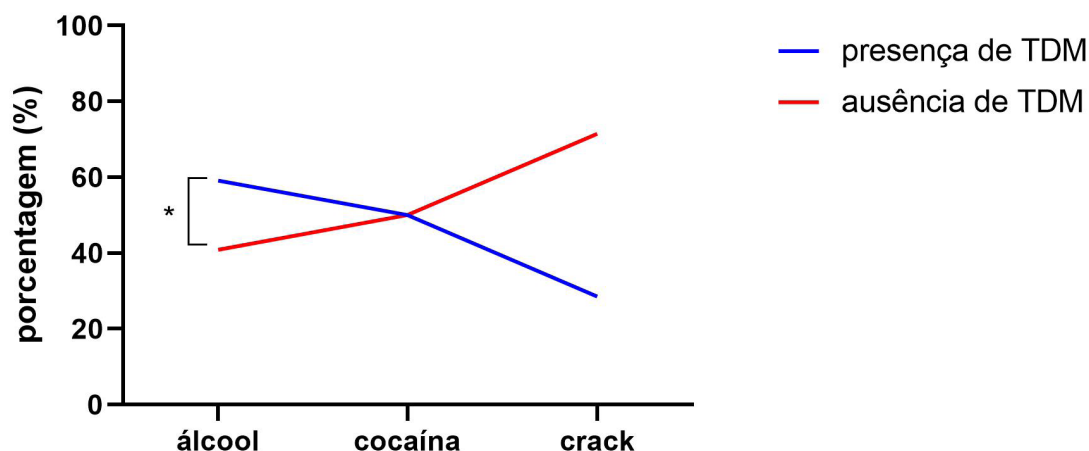
* p<0.028 *per* Pearson chi-square test. †TDM = *Transtorno Depressivo Maior* (Major Depressive Disorder)

Figure 1 - Graph of percentage of patients with presence and absence of MDD according to the type of drug that was the reason for hospitalization. Criciúma, SC, Brazil, 2019

Among the participants with MDD, 74 (60.2%) met the diagnostic criteria for severe alcoholism and six (54.6%), moderate, demonstrating the association between the severity of alcoholism and MDD (p=0.003), according to Pearson's chi-square test. When considering the participants who do not have disorder due to alcohol abuse, nine (52.9%) present MDD.

Regarding the individual variables and their possible associations to the MDD, with the exception of the "length of stay", no statistical correlations were observed, as shown in Tables 3 and 4.

Table 3 - Quantitative social variables of patients with presence and absence of MDD. Data presented in mean ± standard deviation. Criciúma, SC, Brazil, 2019

	Presence of MDD*	Absence of MDD*	value of p†
Number of hospitalizations	5.19 ± 2.86	5.21 ± 3.05	0.970
Length of hospitalization (days)	87.72 ± 57.62	85.43 ± 53.69	0.027
Current age (years)	37.37 ± 10.82	37.89 ± 11.37	0.768
Age at the beginning of use (years)	14 ± 1.89	14.08 ± 2.55	0.812

* MDD = Major Depression Disorder; †Teste Pearson chi-square

Table 4 - Qualitative social variables of patients with presence and absence of MDD. Data presented in number (percentage). Criciúma, SC, Brazil, 2019

	Presence of MDD *	Absence of MDD *	Value of p†
Religion			0,1407
Catholic	76 (57.6%)	56 (42.4%)	
Protestant evangelical	8 (40%)	12 (60%)	
Agnostic/atheist	5 (55.6%)	4 (44.4%)	
Marital status			0.9406
Single	77 (55.4%)	62 (44.6%)	
Stable union/ marriage	12 (54.6%)	10 (45.4%)	
Education			0.5074
Illiterate	2 (50%)	2 (50%)	
Elementary school	13 (44.8%)	16 (55.2%)	
Highschool	72 (58.5%)	51 (41.5%)	
Higher education	2 (40%)	3 (60%)	

*MDD = Major Depression Disorder; †Pearson's chi-square test

Discussion

Depression, in individuals with chemical dependence, can compromise not only the treatment of the basic pathology, but also potentiate the depressive symptoms if there is not an adequate diagnosis and psychological follow-up[8-10]. This study had as hypothesis that individuals

admitted to rehabilitation clinics had MDD and, in turn, suffered from under-diagnosis.

The understanding of this dual comorbidity and its representation in contexts of social isolation is still a little researched field and allows us to infer how and on what basis it is constructed[1-3]. These issues, in addition to being academic questions, are important starting points for the construction of more functional coping methodologies.

Among different authors, one can find a level of similarity for some variables that describe the profile of patients living in rehabilitation centers for chemical dependency[2,11-12]. The socio-demographic data of the population of this study are similar to those found by most of the analyzed works, such as the average age of 37.8 years, single (86.3%), religious (98.4%) and with complete High School (74.9%).

The category of marital status "single" can be interpreted from two angles: the first as the basis for chemical dependency due to a possible loss of the protection factor exerted by the family/conjugal bond or the second as a consequence of the harmful attitudes and behaviors that this disease reflects, producing a withdrawal of people from their social circle[2,13-14].

The average age among the participants was that of other studies[1,3]. Most of the population started using psychotropic substances in adolescence (average = 14.03 years) and has a time of drug consumption over 30 years. The drug of first use, in most cases, was alcohol, possibly because it is a licit and low cost substance, as well as socially accepted.

Contrary to other works, the use of substances from an early age did not seem to hinder the performance of the studies up to the average degree (74.3%). However, it seems to be a factor that contributes to the non-fulfillment of higher education (96.7%). On the other hand, population studies suggest that people with low schooling or not literate present a higher prevalence of psychopathologies, among them, chemical dependency[13,15]. As a study conducted in the state of Rio Grande do Sul showed that the frequency of psychopathologies in individuals with higher education was low in relation to those not in school, suggesting that higher education would be a factor of protection against chemical dependency[1].

In Brazil, the average age of completion of high school is 17 ±1 years. On the other hand, in this study, the average age at the beginning of drug use was 14 years. When analyzing these findings, one can conjecture that the frequency of psychoactive substance consumption happened gradually, as well as other factors, such as pressure from parents (not to abandon school), from institutions (threats to contact guardianship councils) and/or subjectivity (fear, absence of addiction, low purchasing power of drugs), contributed to the non-abandonment of studies.

However, once they are older and have been in use for three or more years, the above-mentioned protective factors would lose strength, which in turn would help in not taking higher education courses.

Since these subjects are in emotional vulnerability and social destabilization, the precise diagnosis of MDD when entering the institution and the regular psychological/psychiatric follow-up are essential for the correct management of depression in the subject with chemical dependence, because once the comorbidity is not treated, the probabilities of non-resolution of the underlying disease rise significantly[16-18]. The data obtained showed that no patient in both clinics received a psychiatric consultation upon admission and that only 5.5% attended Psychiatry and Psychology offices regularly. This information leads to the question that, if the patients are hospitalized for chemical dependence and are not diagnosed with other psychopathies during their stay, there may be under-diagnosis and, consequently, treatment failure.

As an aggravating factor of this lack of longitudinality and completeness of care, it was identified that more than half of the hospitalized patients have criteria according to the SCID-V-CV instrument for MDD (55.3%), since the pathologies that could interfere in the diagnosis were excluded because they present similar patterns of symptoms, such as: abstinence (3.8%) and sadness due to isolation and deprivation of freedom (11.5%).

In other studies, the results showed that the average MDD in chemical dependents varies between 18 and 26%[4,6], In other words, the participants in this survey had double the prevalence (55.3%). This data can be interpreted through two main angles: a) the instrument used has greater diagnostic sensitivity and, therefore, greater detection power; b) the population analyzed lives deprived of freedom, not having interference from external factors, which could concentrate the depressive symptoms. In short, TCCDs in the southern region of Santa Catarina have a higher prevalence of MDD compared to other national and international studies.

Furthermore, the prevalence of depressive disorder was higher in alcohol-dependent individuals (59.1%) in relation to those dependent on other substances, and the alcoholic dependence was statistically significant with the diagnosis of depression (p=0.028). Furthermore, significance was also found in relation to the severity of alcohol dependence, with users with severe dependence (60.2%) having a higher MDD index. On the other hand, users with mild alcohol dependence were not related to the diagnosis of MDD.

Similarly, a paper described that alcohol abuse has an association with depression and reported that this information may originate from the fact that there is a conglomerate of problems associated with alcohol abuse

(adverse effects on health, problems at work, in family relationships, in social circles that do not use drugs) and that alcohol abuse may contribute to the occurrence of depression[1,3-19-20].

Some authors have added that, when untreated, the presence of psychopathologies in patients with chemical dependence, among them MDD, can lead to lapses or relapses in relation to substance use. This statement seems to corroborate the data found in this study, because by observing the variable "number of hospitalizations", it was identified that the average was 5.23 ± 2.887, i.e., in most cases, there was failure in the treatment of the first hospitalization and the vast majority of patients is rediciving.

It was observed that the group of participants with depression remained less time in relation to the non-depressed (p=0.027), since it may indicate that the fact that the subject lives with depression has a direct influence on the result of the treatment, because the subjects with this condition leave the rehabilitation programs more quickly, compromising the objective of the TCCDs in improving the picture of chemical dependency. Once untreated subjects regain their freedom with a marked psychopathological condition such as depression, they may experience a feeling of frustration for not being able to finish the treatment and, therefore, favor the reuse of drugs as a means of relieving emotional pain[18,20-23].

On the other hand, the programs run by the rehabilitation centers in southern Santa Catarina have 360-day duration, and this study found that the average number of days interned of those evaluated was 87.78 ± 57.6.

Since this is a cross-sectional study, the findings correspond to a specific time cut, constituting a limitation of this work, since there was no possibility of verifying the causality relationship between the depression and chemical dependence variables. Therefore, it is suggested that researches covering a longer period of follow-up be carried out, enabling a greater understanding of this problem.

Conclusion

The findings showed that the presence of depression in subjects with chemical dependence is high. Therefore, it is essential to diagnose/screen this comorbidity in the subject who enters TCCDs. Moreover, the co-occurrence of these psychopathologies reduces the length of hospitalization (abandonment of the process), in the same way that it can contribute to the ineffectiveness of the treatment. It is a fact that both psychopathological pictures are potentiated when in comorbidity, generating costs of readmission for addicts and public funding entities, as well as producing or increasing the load of psychic suffering.

Finally, such findings may contribute to the development of therapeutic strategies that, taking into account the possibility of depression in individuals diagnosed with chemical dependence, are more assertive and effective. In this sense, studies that aim to address this problem more broadly, involving a larger number of patients and with a greater diversity of sites, may contribute substantially to the development of possible strategies to be taken regarding the treatment of people suffering from chemical dependency.

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Author's Contribution

Study concept and design: Pablo Michel Barcelos Pereira, Rafael Mariano de Bitencourt. Obtaining data: Pablo Michel Barcelos Pereira. Data analysis and interpretation: Pablo Michel Barcelos Pereira, Rafael Mariano de Bitencourt. Statistical analysis: Pablo Michel Barcelos Pereira. Drafting the manuscript: Pablo Michel Barcelos Pereira Critical review of the manuscript as to its relevant intellectual content: Pablo Michel Barcelos Pereira, Rafael Mariano de Bitencourt.

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Conflict of interest: the authors have declared that there is no conflict of interest.

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