

Comorbidity and severity of anxiety and depressive disorders in patients addicted to gambling and alcohol

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Abstract

Introduction. Addictions are disorders that are widespread in the world. At present, except for all the currently pervasive psychoactive substance addictions such as e.g. nicotine, alcohol, drugs, there are also more frequently occurring activity addictions, e.g. gambling, internet, shopping or sex, that are subjects of interest for many researchers [1].

A few theses heretofore have documented the comorbidity of mental disorders and addictions. The phenomenon of cross-addiction also suggests that there are some common etiological factors that contribute to the development of more than one addiction. What is more, the comorbid mental disorders may play part in the persistence of addiction-related problems [2].

The aim of this thesis was assessment of comorbidity and intensity of depression and anxiety in three groups of patients: two groups of those addicted to either alcohol or gambling and one of those addicted to both: alcohol and gambling.

Material and method. The research was conducted in a group of 101 people, among whom 38 were addicted to alcohol, 31 addicted to gambling and 32 addicted to alcohol and gambling. All of the patients met the criteria of addiction to alcohol and pathological gambling according to ICD-10. Among the researched people there were patients of Circadian Ward of Alcohol Addiction Therapy in Lublin and members of the community of Anonymous Gamblers in Lublin. The research was conducted over the period from November 2010 to April 2011.

Two scales: Hamilton Depression and Anxiety Rating Scale as well as the Scale of the intensity of anxiety, depression and stress DASS-42 were used in the research. In order to gather the socio-demographic data, an authorial questionnaire was used. The participation in the research was entirely voluntary and anonymous.

Results. As a result of statistical analysis, it was stated that the symptoms of a major or a severe depression were insignificantly more frequent among the addicted to alcohol and gambling (48.39%) than among those addicted only to alcohol (23.68%) or gambling (25.00%). The ascertained differences however, were not statistically significant ($p=0.17$).

From the conducted research, it can be evaluated that anxiety symptoms on the level described as severe occurred more often in the group of alcohol addicts (44.74%) than in the group of those addicted to both alcohol and gambling (41.94%) and those addicted only to gambling (34.38%). The ascertained differences were not statistically significant ($p=0.12$).

As an outcome of the statistical analysis it was stated that stress symptoms were observed insignificantly more frequently in the group of gambling addicts (68.75%) than in the group of those addicted to both alcohol and gambling (64.52%) and alcohol addicts (44.74%). The ascertained differences were not statistically significant ($p=0.09$).

The conducted research has shown that in the group of gambling addicts depression symptoms occurred insignificantly more often (78.13%) than in those addicted to both alcohol and gambling (74.19%) and those addicted only to alcohol (60.53%). The ascertained differences were not statistically significant ($p=0.23$).

As a result of the statistical analysis it was stated that the intensity of anxiety had insignificantly greater incidence in the group of people addicted to both alcohol and gambling (41.94%) than in the group of those addicted only to alcohol (23.68%) and gambling addicts (28.13%). The ascertained differences were not statistically significant ($p=0.24$).

Conclusions. The anxiety and depressive disorders are often comorbid with alcohol addiction and pathological gambling. Depressive disorders are a more frequent phenomenon in the group of pathological gamblers as well as in the group of those addicted to both alcohol and gambling and they are usually of either moderate or heavy intensity. The stress level is the highest in the group of patients addicted to gambling. There are some differences existing in the assessment of occurrence and intensity of anxiety in the researched groups. As it can be drawn from the conducted research, in the patients' subjective assessment, the anxiety disorders are the rarest case among the alcohol addicts, whereas according to the clinicians' assessment, there is the greatest incidence of them in this very group.

Keywords: addiction, anxiety, depression

Introduction

Addictions are disorders that are widespread in the world. At present, except for all the currently pervasive psychoactive substance addictions such as e.g. nicotine, alcohol, drugs, there are also more frequently occurring

activity addictions, e.g. gambling, internet, shopping or sex, that are subjects of interest for many researchers [1]. A few theses heretofore have documented the comorbidity of mental disorders and addictions [2]. The phenomenon of cross-addiction also suggests that there are some

common etiological factors that contribute to the development of more than one addiction. What is more, the comorbid mental disorders may play part in the persistence of addiction-related problems.

People who seek professional help show a high incidence of abuse or addictions to various psychoactive substances. Those who seek help most often are the gambling addicts who have no current psychoactive substance addiction problems; however it used to pose a substantial problem to them in the past. Patients addicted only to gambling seek help much less often. Even cigarette smoking seems to have a vital influence over the enhancement of psychosocial problems in gamblers. In the analysis [3] it was demonstrated that smokers had more serious gambling problems in comparison with the non-smoking gamblers. Smokers more frequently received psychiatric medicines and also experienced psychiatric symptoms, especially anxiety.

Not much is currently known about the mutual temporal dependencies between the beginning of the gambling-related problems and psychoactive substance abuse. Cho et al. [4] have shown that alcohol-related problems preceded the problems with gambling in the majority of males addicted to both alcohol and gambling in Korea. Whereas Hall [5] proved that gambling preceded cocaine addiction in 72% of the people in his research group that consisted of people addicted to this drug. Cunningham-Williams et al. [6] have demonstrated that the majority of pathological gamblers begun smoking cigarettes, marijuana and alcohol drinking before the occurrence of gambling problems. On the other hand however, pathological gambling preceded the addiction to different substances, especially stimulants.

Pathological gambling and psychoactive substance abuse show a great incidence of comorbidity. In a research conducted on healthy individuals it was proved that alcohol facilitates, through lowering of resistance, the beginning and continuation of a game; it also extends the gaming period as well as it increases the amount of the means destined for the game. Therefore, any psychoactive substance use during gambling may hinder the assessment abilities of an individual and it may also lead to an enhancement of problems in either one or both of the spheres [7].

Aim

The aim of the thesis was the assessment of comorbidity and intensity of depression and anxiety in three groups of patients: two groups of those addicted to either alcohol or gambling and one of those addicted to both: alcohol and gambling.

Material

The research was conducted over the period from November 2010 to April 2011 in a group of 101 people,

among whom 38 were addicted to alcohol, 31 addicted to gambling and 32 addicted to alcohol and gambling. All of the patients met the criteria of addiction to alcohol and pathological gambling according to ICD- 10. Among the researched people there were patients of Circadian Ward of Alcohol Addiction Therapy in Lublin and members of the community of Anonymous Gamblers in Lublin. The average age of the people addicted to alcohol was 44.63 years, of those addicted to gambling it was 36.63 years and of those addicted to both alcohol and gambling it was 39.42 years of age. In the group of alcohol addicts there was 89.74% of males and only 10.53% of females. In the group of people addicted to gambling there was 78.13% of males and 21.87% of females, whereas in the group of those addicted to both alcohol and gambling there was 100% of males. The most frequent cases of the pole were people being in a relationship who constituted 55.26% of the alcohol addicts, 41.94% of those addicted to both alcohol and gambling and 65.63% of gambling addicts. As a result of statistical analysis, it was proved that the withdrawal time was the longest among people addicted only to gambling (19.25 weeks), the shortest in the group of alcohol addicts (7.23 weeks) and in the group of those addicted to both alcohol and gambling it was 11.13 weeks. It was also proved that 94.74% of the alcohol addicts participated in counselling sessions, 86.11% of whom participated in group therapies. In the group of the gambling addicts, there were 75.00% of subjects participating in counselling, with 83.33% attending self-help groups. Among the people addicted to both alcohol and gambling, there were 61.2% of subjects participating in counselling, out of whom 16% attended self-help groups.

Method

Two scales: Hamilton Depression Rating Scale (HDRS) as well as the Depression Anxiety Stress Scale DASS- 42 were used in the research. In order to gather the socio-demographic data, the authorial questionnaire was used. The gathered data was subject to a statistical analysis. The values of analysed measurable parameters were presented with the use of mean and standard deviation, whereas those immeasurable ones were presented with the use of numerosness and interest. For the measurable features the normal distribution of the analysed parameters was assessed with the use of Shapiro-Wilk *W* test. For the comparison of two independent groups, a Mann-Whitney *U* test was used. For more than two groups a Kruskal-Wallis test was used. In order to examine the relationship between the variables, the R Spearman correlation was used. For the unlinked qualitative features, to detect the existence of differences between the compared groups, the χ^2 homogeneity test was used. The χ^2 independ-

ence test was also used to detect the existence of differences between the examined features.

For the assessment of the magnitude of variance and identification of factors explaining the quality of life in the physical and mental aspect, a regression analysis was used, accepting the exclusion criterion for F as being $p > 0,01$. The results of regression analysis were presented by giving the revised determination coefficient (R^2) which informs about the magnitude of the explained variable which is dependent through the model-included independent variables and also about the value of the coefficients of the model parameters (Beta). It was also given that values and levels of the t test validity which tests the validity of every parameter of an equation as well as values and levels of F test validity that tests values of all of the parameters. Additionally, the value of partial correlation coefficient was given which informed about the contribution of a particular independent variable to the explanation of variability of a dependent variable.

The validity level was accepted as being $p < 0,05$ which pointed out the existence of statistically valid differences or dependencies. The database and the statistical research were developed with the use of STATISTICA 9.0 (StatSoft, Polska) software.

Results

The first stage of the research was the analysis of data obtained by the researched in subscales of the DASS-42 scale. The subjects of the analysis were the following: the incidence of depression, anxiety and stress occurrence and their intensity in the researched groups:

- Group I - patients addicted to alcohol
- Group II - patients addicted to both alcohol and gambling
- Group III - patients addicted to gambling.

Table 1. Depressive disorders according to the DASS-42 scale

Group	Depression			Together
	Norm	Mild/moderate	Major/severe	
	n %	n %	n %	
Group I	11 28.95%	18 47.37%	9 23.68%	38 100.00%
Group II	4 12.90%	12 38.71%	15 48.39%	31 100.00%
Group III	8 25.00%	16 50.00%	8 25.00%	32 100.00%
Together	23 22.77%	46 45.54%	32 31.68%	101 100.00%
Statistical analysis: $\chi^2 = 6.47$; $p = 0.17$				

The research conducted with the use of the DASS-42 scale implies that in 28.95% (n=11) of patients of group I there were no signs of depression observed, whereas in 13.16% (n=5) of them mild symptoms were noted and

in 34.21% (n=13) of the researched group, moderate symptoms were diagnosed, 15.71% (n=6) of them were recognized as having major depression symptoms and in 7.89% (n= 3) of the patients the symptoms observed were classified as severe.

In group II it was stated that 12.90% (n=4) of the patients showed no signs of depression at all, whereas in 12.90% (n=4) the symptoms were mild, 25.82% (n=8) showed moderate symptoms, in 35.48% (n=11) of them the symptoms were recognized as major and in the remaining 12.90% (n=4) of the patients the depression symptoms were severe.

In group III, 25.00% of the patients showed no signs of depression, whereas in 15.63% (n=5) of them the depression symptoms were mild, in 34.37% (n=11) of them the depression symptoms were classified as moderate, 15.63% (n=5) of them had major depressive symptoms, while in the remaining 9.37% (n=3) the symptoms were severe.

As a result of the statistical analysis it was stated that the symptoms of major and severe depression were encountered insignificantly more frequently in group II (48.39%) than in groups: I (23.68%) and II (25.00%). The ascertained differences, however, were not statistically significant ($p = 0.17$).

Table 2. Anxiety disorders according to the DASS-42 scale

Group	Anxiety			Together
	Norm	Mild/moderate	Major/severe	
	n %	n %	n %	
Group I	7 18.42%	14 36.84%	17 44.74%	38 100.00%
Group II	11 35.48%	7 22.58%	13 41.94%	31 100.00%
Group III	15 46.88%	6 18.75%	11 34.38%	32 100.00%
Together	33 32.67%	27 26.73%	41 40.59%	101 100.00%
Statistical analysis: $\chi^2 = 7.31$; $p = 0.12$				

The research implies that in 18.42% (n=7) of the researched in group I there were no signs of anxiety observed, whereas in 5.26% (n=2) the symptoms were mild, 31.58% (n=12) of them showed moderate symptoms, in 13.16% (n=5) of them the symptoms were recognized as major and in the remaining 31.58% (n=12) of the patients the anxiety symptoms were severe.

The research proves that 35.48% (n=11) of the group II patients showed no signs of anxiety, whereas in 9.68% (n=3) of them the depression symptoms were mild, in 12.90% (n=4) of them the anxiety symptoms were classified as moderate, 19.35% (n=6) of them had major anxiety symptoms, while in the remaining 22.59% (n=7) the symptoms were severe.

The conducted research suggests that in 46.87% (n=15) of group III patients there were no signs of anxiety observed,

whereas in 3.13% (n=1) of them mild symptoms were observed, in 15.63% (n=5) of the researched, moderate symptoms were diagnosed, 18.74% (n=6) of them were recognized as having major anxiety symptoms and in 15.63% (n=5) of the patients the symptoms observed were classified as severe.

The outcome of the conducted research proves that anxiety symptoms, either major or severe, were most common in group I (44.74%) than in both of the groups: II (41.94%) and III (34.38%). The determined differences were not statistically significant ($p=0.12$).

Table 3. Stress according to the DASS-42 scale

Group	Stress		Together
	Norm	Present	
	n %	n %	
Group I	21 55.26%	17 44.74%	38 100.00%
Group II	11 35.48%	20 64.52%	31 100.00%
Group III	10 31.25%	22 68.75%	32 100.00%
Together	42 41.58%	59 58.42%	101 100.00%
Statistical analysis: $\chi^2 = 4.81$; $p=0.09$			

According to the data collected during the research it follows that 55.26% (n=21) of the patients did not show any signs of stress, in 7.89% (n=3) of them mild symptoms of stress were recognized, in 21.06% (n=8) the symptoms were said to be moderate, whereas the remaining 15.79% (n=6) had major stress symptoms.

The research has revealed that 35.48% (n=11) of the patients in group II did not show any signs of stress at all, whereas 12.90% (n=4) of them had mild stress symptoms, 32.26% (n=10) of the patients were classified as having moderate stress symptoms and 19.36% (n=6) of them showed major stress symptoms.

It was concluded that 31.25% (n=10) of the researched subjects in group III did not experience any symptoms of stress, whereas 15.63% (n=5) of them were said to be having mild stress symptoms, in 43.75% (n=14) of them moderate stress symptoms were observed and in 9.38% (n=3) of the patients the stress symptoms were described as major.

On the grounds of the statistical analysis it has been concluded that stress symptoms were encountered insignificantly more often in group III patients (68.75%) than in patients of the group II (64.52%) and group I (44.74%). The ascertained differences, however, were not statistically significant ($p=0.09$).

The next stage of the research was the analysis of results that were obtained with the use of Hamilton Depression Rating Scale. The subjects of the analysis were the frequency and intensity of anxiety and depression symptoms in the groups under research.

Table 4. Depression according to Hamilton Depression Rating Scale

Group	Depression		Together
	Lacking	Present	
	n %	n %	
Group I	15 39.47%	23 60.53%	38 100.00%
Group II	8 25.81%	23 74.19%	31 100.00%
Group III	7 21.88%	25 78.13%	32 100.00%
Together	30 29.70%	71 70.30%	101 100.00%
Statistical analysis: $\chi^2 = 2.90$; $p=0.23$			

In 39.47% (n=15) of the patients of group I there were no signs of depression observed at all, whereas 18.42% (n=7) of them had a mild type of depression, 28.95% (n=11) of the patients were said to be having moderate depression symptoms and in 13.16% (n=5) of them major depression symptoms were recognized.

In 25.81% (n=8) of the patients of group II no signs of depression were recognized, whereas 19.35% (n=6) of them were diagnosed with mild depression symptoms, 19.35% (n=6) of the patients were moderately depressive and the remaining 35.49% (n=11) of them were said to be having major depression.

In 21.88% (n=7) of the patients from group III there were no signs of depression, whereas in 34.36% (n=11) of them mild depression symptoms were observed, 21.88% (n=7) of the patients were classified as having moderate depression and the symptoms in 21.88% (n=7) of them were said to be major.

The conducted research has shown that in group III the depression symptoms occurred insignificantly more often (78.13%) than in the other two groups: II (74.19%) and I (60.53%). The ascertained differences were not statistically significant ($p=0.23$).

Table 5. Anxiety according to Hamilton Depression and Anxiety Rating Scale

Group	Anxiety		Together
	Lacking	Present	
	n %	n %	
Group I	29 76.32%	9 23.68%	38 100.00%
Group II	18 58.06%	13 41.94%	31 100.00%
Group III	23 71.88%	9 28.13%	32 100.00%
Together	70 69.31%	31 30.69%	101 100.00%
Statistical analysis: $\chi^2 = 2.82$; $p=0.24$			

In 76.32% (n=29) of the patients of group I there were no signs of anxiety observed, whereas in 15.79% (n=6) of them mild-intensity anxiety disorders were recognized and in 7.89% (n=3) of the patients the anxiety symptoms were said to be moderate.

In 58.06% (n=18) of the patients of group II there were no signs of anxiety, whereas in 16.13% (n=5) of the patients the anxiety symptoms were mild and in the remaining 25.81% (n=8) of them the symptoms were said to be moderate.

In 71.88% (n=23) of the patients of group III there were no signs of anxiety observed, whereas in 12.50% (n=4) of them the anxiety symptoms were mild and in 15.63% (n=5) of the patients the symptoms were moderate.

As a result of the statistical analysis conducted it was stated that the intensity of anxiety was insignificantly more frequently encountered in group II (41.94%) than in group I (23.68%) and III (28.13%). The ascertained differences were not statistically significant ($p=0.24$).

Discussion

There are a lot of theses in literature that concern the comorbidity between depressive disorders and both: alcohol addiction and pathological gambling [2]. However, there are not many existing publications concerning anxiety disorders in these groups of patients. The majority of these theses, however, are confirmed by the fact of the existence of a strong dependency between the comorbidity of the disorders. There are, however, no theses regarding the intensity of the disorders.

A panoramic research in Edmonton, Canada, which included 7214 adults, has shown that pathological gamblers had 2.3 times more frequent occurrence of mood disorders and 2.9 times more frequent anxiety disorders. In the research, the occurrence of major depression did not differ between the group of pathological gamblers and the rest of the researched group. Similarly, a panoramic research with the use of short depression scale conducted in Omaha, Nebraska State, did not show any correlation between depression symptoms and pathological gambling [2].

The outcomes of our research prove that depressive disorders are the rarest cases in the group of patients addicted only to alcohol; they are more common, however, among the patients addicted only to gambling and those addicted to both: alcohol and gambling. We also observed the highest stress level in patients addicted to gambling, which may point out a correlation between stress level and the occurrence of depression disorders. The results regarding stress level with the use of DASS-42 scale as well as the Hamilton's scale are discrepant. This is, most probably, due to the fact that the DASS-42 scale subjectively assesses patient's state of being. However, as it can be deduced from the gathered data, the patient's

state of being according to the very patient differs substantially from the clinician's picture of the patient.

According to the DASS-42 scale, a comparable incidence of anxiety occurrence was observed in two groups: the one with patients addicted to gambling and that of patients addicted to both: alcohol and gambling. In the group of patients addicted to alcohol the incidence was almost three times lower. On the other hand, according to the clinician's assessment with the use of Hamilton's scale, it was the group of alcohol addicts that had the greatest incidence of anxiety disorder occurrence. Therefore, it is difficult to formulate unambiguous conclusions on the basis of the obtained results.

Conclusions

1. Depressive and anxiety disorders often show comorbidity with alcohol addiction and pathological gambling.
2. Depressive disorders are more common in groups of pathological gamblers and those addicted to both: alcohol and gambling and they usually have moderate and major intensity.
3. The stress level is the highest among the group of gambling addicts.
4. There are differences existing in the assessment of occurrence and intensity of anxiety in the researched groups. As it results from the conducted research, in the patients' subjective assessment anxiety disorders are the rarest in the group of alcohol addicts, whereas according to the clinician's assessment, it is this group that has the highest incidence of them.

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