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Factors Associated With a Quality of Life Decrease in Alcoholic Patients Who Sought Treatment

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Abstract

Objective: We investigate the quality of life (QoL) of subjects with alcohol abuse/dependence, and we focus on aspects that are associated with alcohol consumption.

Methods: We included inpatients and outpatients (n=174) of an addiction treatment program. All of the patients had had problems related to alcohol within the last 30 days. We used the WHOQOL-BREF to measure the patients' QoL, and we used the ASI-6 to investigate the severity of problems related to alcohol and substance use. The main outcome measures considered for the linear regression analyses were the WHOQOL-BREF domains. The independent factors were the scores in the ASI-6 areas.

Results: We found a negative correlation between the WHOQOL-BREF and the ASI-6. Significant correlations were included in the multiple linear regression pattern, which considered p<0.05 to be the cut off of statistical significance. We examined the regression analyses between the ASI-6 summary scores and the WHOQOL-BREF domains using variables that presented statistical significance in the correlation analysis. All ASI-6 problem areas showed negative correlations with domains.

Conclusion: The decrease in QoL was not directly linked to the severity of alcohol use but rather with its consequences. The ASI-6 medical area was associated with a lower QoL in all of its domains. Measures of the problems related to alcohol misuse seem to be a significant predictor of QoL scores; the more often that alcohol is a problem in a patient's life, the worse the patient's QoL will be. Instead of treatment, other strategies should be developed to address these problem areas to not only reduce substance use but also to significantly improve the QoL of alcoholics.

Keywords: Alcohol; Alcoholics; Quality of life; Treatment; Problems

Introduction

Harmful alcohol use is a worldwide problem that results in millions of instances of death, disease, injury, and violence [1]. The significant interpersonal, psychological, and medical problems that arise due to alcohol misuse have an impact on different quality of life (QoL) domains. The construct of QoL encompasses the central notion that health is not restricted to the absence of disease; it also includes a state of social, mental, and physical well-being that is consistent with the definition of health proposed by the World Health Organization [2-4].

The presence and absence of alcohol-use disorders are strongly associated with changes in mental and psychological functioning. Individuals who became alcohol dependent show a significant decrease in QoL scores; individuals who achieve full and partial remission from alcohol dependence show a significant improvement in QoL [5,6]. Notwithstanding several populational studies that have demonstrated that low doses of alcohol may improve QoL (particularly in individuals older than 40 years [7,8]), all statistically significant associations between moderate drinking and improvement in QoL disappear when controlling for confusing factors [9]. Similarly, data have demonstrated that the high severity of problems in many areas of the Addiction Severity Index sixth version (ASI-6) such as social, physical, and interpersonal relations is related to the severity of alcohol and drug use in individuals who seek specialized treatments. On the other hand,

abstinence from alcohol is associated with a reduction in the severity of problems related to alcohol misuse [10].

QoL is also an important factor for establishing treatment outcomes of alcohol misuse [11]. Some authors [12,13] have reported that different therapeutic interventions may improve the QoL of patients suffering from alcohol misuse, which suggests that QoL may be an indicator of treatment efficacy. Moreover, the intensity of care provided to the psychological and social domains of QoL are significantly influenced by the severity of dependence [14].

Although the decrease in QoL aspects in alcohol users is well established in the literature, the problems related to alcohol consumption that are linked to this decrease are not well known. The purpose this study is to investigate the QoL of subjects with alcohol

abuse/dependence; we also focus on which aspects are associated with the consumption.

The relationship between ASI dimensions and QoL, particularly when related to QOL outcomes can provide clues about the potential value of these variations, with a consequent impact on the individual's life. QoL is a powerful indicator that can help set priorities to implementing better medical and psychotherapeutic interventions for alcoholic patients and in the designing of public policies.

Materials and Methods

Design

We conducted a multicenter cross-sectional study between January and November 2006. We collected our sample from three research centers located in Brazilian state capitals (Rio de Janeiro, São Paulo – southeast region – and Porto Alegre – south region).

Sampling procedures

This study is a part of a broader, ongoing study with a target sample of 300 current adult (males or females older than 18) substance abusers from outpatient and inpatient units with a history of alcohol use within 30 days of the interview.

We recruited participants from hospitals and outpatient units among patients seeking specialized treatment for drug abuse or dependence. All patients reporting drug abuse or dependence as the main reason for their treatment were invited to participate in our study. Patients were included in the study as they were admitted to the treatment; no media advertisements were conducted. We interviewed the patients with a focus on the period immediately preceding the date of admission.

The entire sample was diagnosed with alcohol abuse or dependence measured by MINI, the International Neuropsychiatric Interview [15]. All individuals who answered "Alcohol" to a specific ASI question – "Which substance listed (Alcohol, Marijuana, Sedatives, Cocaine, Crack, Stimulants, Hallucinogens, Heroin, Methadone, Other Opiates, Inhalants, Tobacco) is causing you the most difficulty and may have led to your entering treatment?" – were considered in the sample.

The inclusion criteria included an age of at least 18 and the use of at least one of the substances under investigation in the 30 days prior to the interview. The only exclusion criterion was the presence of neurological or severe psychiatric illness with active symptoms at the time of the interview. The symptoms were ascertained by trained clinical interviewers. Of the 311 patients screened, seven patients were not included in the sample because of severe depressive or psychotic symptoms, and four patients did not agree to participate in the study. Two additional subjects failed to complete the QoL instruments and were excluded.

Instruments

All patients included in the study were assessed using the Brazilian version of the ASI-6, a multidimensional, semi-structured interview lasting between 45 and 90 minutes that was administered by a previously trained interviewer. The individuals' lifetime and current status were evaluated according to seven functional areas: medical status, employment and support, legal status, family and social status, psychiatric status, alcohol use, and drug use. The assessment of symptoms/problems in each functional area included the patient's lifetime, the previous six months, and, in particular, the 30 days prior to the interview. The ASI-6 Summary Scores for Recent Functioning (SS-

Rs) is a summary of scores that assesses functioning status in the last 30 days and provides objective information derived from items based on a combination of rational and empirical methods. The ASI-6 SS-Rs were psychometrically derived using nonparametric item response theory and classical psychometric methods and were then standardized, which has the advantage of reducing the extent of the skewness in the scores. The SS-Rs has already been translated to Brazilian Portuguese and generates one score for each area, except for the family/social area, for which three scores are generated (problems, support, and child problems). The SS-Rs are represented as standardized T-scores with a mean of 50 and a standard deviation (SD) of 10, and they may range from 0–100. A higher score in a given area means that a patient is more impaired by problems related to that area, which indicates a more severe problem [10,16-18].

We assessed QoL using the WHOQOL-BREF, an international cross-culturally comparable QoL assessment instrument. The WHOQOL-BREF is a short version of the World Health Organization Quality of Life assessment instrument composed of 100 questions (WHOQoL-100). The WHOQOL-BREF is a widely used self-report instrument to measure QoL. It was developed simultaneously in 15 international centers and validated in Brazilian Portuguese. It assesses individuals' perceptions in the context of their culture and value systems and their personal goals, standards, and concerns. The WHOQOL-BREF includes 26 items that measure QoL in the following broad domains: physical health, psychological health, social relations, and environment [19].

Logistics and quality control

In order to ensure quality control, field interviewers were trained and received continuous supervision and support from coordinators. In order to analyze the inter-rater reliability, we compared the scores of 41 random pairs of interviewers from all centers who individually interviewed the same patient (a total of 41 patients). The inter-rater comparisons exhibited similar scores between interviewers in all areas of the ASI-6 except for employment, which was not used in the present analysis, and alcohol areas. The effect size for differences in the means obtained in each group was moderate (0.75) for the employment subscale and small (0.43) for the alcohol subscale.

Procedures and analyses

We entered the data into an Access database and exported them to SPSS (Statistical Package for the Social Sciences; Chicago Il, USA) version 16.0 where we performed the analyses. One person was responsible for checking the data entry and performing the quality control. We described the categorical variables as absolute frequencies and percentages. The quantitative variables with a symmetric distribution were described as means and SDs; variables with an asymmetric distribution were presented as medians and interquartile ranges.

The age variable exhibited a significance lower than 0.20 (P = 0.136) in the groups divided by the ASI-6 alcohol severity scores. Therefore, we decided to adjust the comparison of the WHOQOL-BREF domains among the tertiles according to the age variable in the regression model. We used Pearson's correlation coefficient to evaluate the correlation between the ASI and WHOQOL-BREF variables.

The main outcome measures considered for the linear multiple regression analyses were the WHOQOL-BREF domains. The independent factors were the areas of the ASI score and potentially confounding factors such as age, gender, and educational level.

Ethical considerations

Standard informed consent was obtained from all of the study participants. Each participant also received a voucher equivalent to $US 15 to compensate him or her for time spent and transportation. The study was approved by the Institutional Review Board of Hospital de Clínicas de Porto Alegre and by the respective boards of all centers included in the study.

Results

Among the 298 individuals included in this sample, 174 subjects noted in the ASI-6 that alcohol caused serious problems in their lives and led them to seek treatment (Table 1). These subjects were included in the present study. All of the subjects that we selected had current

Variable	n	%
Sex – male	153	87.4
Age – years*	41.6	± 8.7
Ethnicity – white	107	61.1
Inpatient	87	50.0
Marital status – with partner	69	39.4
Primary and high school education	117	67.2
Employed	62	35.6
Years of alcohol use (3 times a week or more)**	14	5–23
Years of alcohol abuse (5 or more drinks/day)**	10	4–20
Number of treatments for drugs or alcohol use**	1	0–3
Number of days of alcohol use (last 30 days)**	20	6–30
Daily drinking (last 6 months)	110	62.9
Number of days of binge drinking – 5 (men) or 4 (women) drinks/day (last 30 days)**	15	3–29
Extremely worried about alcohol use	86	49.1
Reported the need for total alcohol abstinence	143	81.7
Number of days of marijuana use (last 30 days)**	2.0	0–10
Number of days of sedative use (last 30 days)**	2.5	0–20
Number of days of cocaine use (last 30 days)**	3.0	0–10

* Mean and standard deviation
** Median and interquartile range

Table 1: Sample characteristics of the 174 alcohol misusers.

problems with alcohol detected by the ASI. The most prevalent drugs used in the sample included marijuana (n=115; 38.5%), cocaine (n=109; 36.5%), and sedatives (n=78; 26.1%) (Table 1).

The mean ASI SS-Rs for each ASI area was: 38.58 (SD=7.46) for medical status, 55.55 (SD=7.82) for employment and support, 43.60 (SD=6.77) for family and social status, 52.93 (SD=7.98) for psychiatric status, 49.32 (SD=9.20) for alcohol use and 53.00 (SD=6.77) for drug use. According to the QoL domains, the means were 46.42 (SD=23.08) for social relations, 59.04 (SD=20.25) for the physical domain, 54.27 (SD=19.59) for the psychological domain, and 51.49 (SD=18.16) for the environmental area. In order to obtain a better understanding of the variables correlated with QoL, we conducted an analysis of Pearson's coefficients between the WHOQOL-BREF domains and the ASI summary scores. We found a negative correlation between these measures. The significant correlations were included in the multiple linear regression pattern, which considered p<0.05 to be the level of statistical significance (Table 2). Based on the bivariate correlations, the ASI medical and psychiatric scores exhibited the highest correlation coefficients with all the WHOQOL-BREF domains. It is important to highlight that these significant correlations were in an inverse sense: The higher the ASI scores, the lower the QoL scores. Problems related to alcohol-related effects (ASI-6) such as medical, psychiatric, and employment issues were found for QoL scores when controlling for socio-demographic variables. We examined analyses between the ASI-6 summary scores and the WHOQOL-BREF domains with the variables showing statistical significance in the correlation analysis. In the physical domain model, 52% of the result variations could be explained by age and the significant scores of medical, psychiatric, and employment areas of the ASI. The psychological domain was also affected by the same variables, which corresponded to 37% of the variance explained by the model. In terms of the social and environmental domains, the major correlated variables were social support and medical domain with total variances of 27% and 38%, respectively. It is essential to note that the variable related to alcohol use did not show significant correlation with any of the WHOQOL-BREF domains (Table 2).

Discussion

The decrease in QoL in the studied population was not directly linked to the severity of alcohol use but was rather linked to the typical problems found in a sample of alcoholics such as medical issues. The ASI medical area, which includes physical conditions, impairment,

Variables	WHOQOL Physical		WHOQOL Psychological		WHOQOL Social Relation		WHOQOL Environment	
	B*	p	B*	p	B*	p	B*	p
Gender male	2.0 (-4.7; 8.7)	0.55	7.0 (-0.5; 14.5)	0.07	11.0 (1.6; 20.4)	0.02	-1.1 (-7.8; 5.7)	0.76
Age > median**	-6.7 (-11.2;-2.3)	<0.05	-6.6 (-12.0; 1.1)	0.02	-6.0 (-12.8; 0.8)	0.09	2.2 (-2.2; 6.7)	0.32
Educational level < 8y	-1.3 (-5.9; 3.4)	0.60	-0.2 (-5.4; 5.0)	0.94	1.7 (-4.8; 8.3)	0.61	-7.4 (-12.1; -2.6)	<0.01
Drug	-	-	-0.2 (-0.5; 0.1)	0.06	-0.3 (-0.6; -0.1)	0.05	-	-
Family/Child	-	-	-	-	-	-	-	-
Alcohol	-0.1 (-0.4; 0.2)	0.52	-	-	-	-	-	-
Psychiatric	-0.5 (-0.8; -0.2)	<0.05	-0.6 (-0.9; -0.2)	<0.05	-0.1 (-0.5; 0.3)	0.71	-0.1 (-0.8; -0.2)	0.50
Medical	-1.0 (-1.3; -0.8)	<0.05	-0.6 (-0.9; -0.3)	<0.01	-0.5 (-0.9; -0.2)	<0.01	-0.5 (-0.8; -0.2)	<0.01
Legal	-	-	-	-	-	-	-	-
Employment	-0.3 (-0.6; -0.1)	<0.05	-0.2 (-0.5; 0.1)	0.06	-0.1 (-0.4; 0.1)	0.32	-0.3 (-0.5; -0.1)	<0.01
Family Social Support	-0.1 (-0.4; 0.1)	0.19	-0.2 (-0.4; 0.1)	0.16	-0.7 (-1.0; 0.4)	<0.01	-0.5 (-0.7; -0.3)	<0.01
r²	0.52		0.37		0.27		0.38	

*Adjusted
**Mean = 41.6 years old
Analyses between the ASI-6 summary scores and WHOQOL domains were examined with variables that presented statistical significance in the correlation analysis.

Table 2: Regression analysis for quality of life domains regarding demographics and ASI-6 summary scores of 174 alcohol misusers.

involvement with treatments, perceptions about pain and concern about one's own health, was associated with lower QoL in all its domains even when adjusted for other confounding factors. The main findings of the present study are that the measures of the problems related to alcohol misuse seem to be a significant predictor of QoL scores and that the more often alcohol turns out to be a problem in a patient's life, the worse the patient's QoL will be. The problems observed in alcoholics, such as medical issues, are associated with the decrease of QoL more than the alcohol use itself.

The ASI psychiatric scores were negatively correlated with physical and psychological domains after adjustment in the multivariate analyses. In addition, problems related to employment were correlated with the QoL physical and environmental domains even after adjustment. We also showed that the ASI subscale related to family and social problems had a negative correlation with the WHOQOL-BREF environmental and social domains according to the regression analysis.

Previous studies have also demonstrated the frequent occurrence of psychiatric comorbidity among individuals with substance dependence and the fact that this comorbidity can affect QoL [20-23]. This fact is in agreement with our finding that the psychiatric composite scores of ASI-6 demonstrated an important association with QoL scores, which showed that the concomitant presence of psychoactive drug abuse and other mental disorders significantly impairs these individuals' lives. According to Kalman et al. [24], the presence of comorbid psychiatric disorders significantly reduces the association between alcohol dependence and health-related quality of life (HRQoL). Individuals with a history of alcohol dependence and one or more other psychiatric disorders had a significantly lower HRQoL in domains related to psychological and social functioning than subjects with alcohol dependence only [24]. Those results are also consistent with a study comparing three groups of patients: alcohol-dependent patients only, patients with alcohol dependence and anxiety, and patients with alcohol dependence and depression. The concomitant presence of symptoms of anxiety and depression and alcohol dependence caused an increase in the severity of addiction-related problems and had a negative effect on QoL [25]. In a three-week, alcohol-dependence inpatient program (n=414), the mean summary scores corresponding to the physical and mental components of QoL were significantly lower at baseline than when the patients were discharged from the hospital. Patients with a high alcohol intake and no somatic comorbidities showed a significant improvement of their summary scores in the physical component of QoL; the improvement in the psychological component of QoL was more pronounced in patients without psychotic symptoms and among individuals who abused or were dependent on illicit drugs. Female gender, old age (> 45 years), and emotional isolation were among the variables negatively related to QoL, and the treatment was more effective for those patients with poorer QoL scores at baseline [13]. We demonstrate this association in this study by means of regression models with relatively high variances showing that alcohol-related problems cause a prominent impairment in QoL. In a previous cross-sectional pilot study, chronic alcoholics were evaluated using the WHOQOL-BREF; subjects with low or moderate alcohol dependence had higher scores in the WHOQOL-BREF domains than the alcoholics with severe dependence [23]. In addition, patients with severe alcohol dependence had higher scores of psychiatric symptoms compared with patients with mild or moderate alcohol dependence; the amount of alcohol intake may play a role in the severity of drinking-related problems.

The ASI-6 aspects related to physical health and psychiatric problems were more strongly associated with the WHOQOL-BREF physical and psychological domains, which reveal the perception of

these symptoms with regard to QoL but not their association with alcohol consumption. When we tested the association of many variables – such as pain and discomfort, energy and fatigue, sleep and rest, daily life activities, dependence on medication or treatment and capacity to work, the presence of positive feelings, memory and concentration, self-esteem, corporal image and appearance – in the entire sample with a regression model, our analyses revealed no significant association between alcohol use and the WHOQOL-BREF domains. On the other hand, the ASI showed that when the participants were asked about the drugs that caused them more problems and led them to seek treatment, they answered that alcohol and cocaine caused the most damage.

It is worth emphasizing that 58% of the sample was concerned about alcohol use, and 74% indicated treatment as being extremely important, which demonstrates that most subjects were motivated to undergo treatment and were aware of their alcohol-related problems. In a recent longitudinal study [12] of adolescent abusers/individuals dependent on marijuana or alcohol, people who received a brief intervention of motivational enhancement therapy and cognitive behavioral therapy exhibited a significant reduction in the number of days of marijuana or alcohol use and a significant increase in their QoL over a 12-month period. The authors found that the changes in the number of days of use were primarily restricted to acute treatment (from 0–3 months); changes in QoL occurred throughout the 12-month assessment period. These findings suggest that as the adolescents reduced the frequency of their substance use they also experienced an increase in their QoL.

The ASI-6 medical domain was the only factor correlated with all QoL domains. This outcome may indicate that this population perceives the decrease in their QoL through physical symptoms or the need for treatment for other clinical conditions rather than by means directly linked to alcohol use. Schaar and Ojehagene [21] investigated QoL predictors in a group of subjects with psychoactive substance dependence and severe mental illness using the DSM-III-R criteria (N = 288; 62.4% males). The results showed significant QoL improvement, which was associated with improvements in physical health, a decrease in the number of legal and family problems, reduced psychiatric symptoms, and a decrease in the number of alcohol and drug problems (ASI), improvement in global functioning (Global Assessment of Functioning - GAF), and a reduction of psychological problems (Symptom Checklist-90 - SCL-90) during an 18-month follow-up. Multiple regression analysis revealed that the improvement in psychiatric symptoms was predictive of better QoL. In addition, the number of months that a patient abstained from using alcohol and drugs was positively associated with increased subjective feelings of QoL [21]. These findings corroborate the notion that QoL is negatively correlated with the severity of alcohol-related problems even when the perception of impairment in the QoL of these patients is not always related to consumption variables or alcohol withdrawal symptoms. Therefore, these results are consistent with previous studies supporting the importance of considering secondary non-drinking outcomes in clinical alcohol treatment trials [26]. Our findings demonstrate a lack of correlation and low/moderate associations between some ASI dimensions and the WHOQOL-BREF domains. Therefore, our data agree with previous studies showing that the pattern of alcohol use is important both for the QoL of alcohol abusers and other aspects of their lives. Psychiatric and/or physical comorbidity, the concomitant use of psychoactive substances, social support, sleep quality, and leisure time affect the QoL of these subjects [27-30]. Family and social support also appears to have an influence on physical health, social relations, and environment domains. The ASI questions are closely related to damage caused by alcohol use in terms of caring, problems caused to the family, and legal issues regarding child custody.

Study Limitations

We acknowledge that there are some limitations to our study. Even though many studies have shown that a decrease in alcohol consumption is a relevant aspect for QoL changes, understanding the relationship among these measures is still complex, particularly if changes occur at the same time [31,32]. Another aspect is the limited capability for generalizing data because the sample included predominantly men from drug dependence treatment centers. The fact that these men sought treatment might have also influenced the QoL analysis. We can assume that these individuals likely experienced more QoL damage than the general population; they accordingly sought treatment. A thorough study of the association between comorbidity and QoL relation and normative data for WHOQOL scores with the objective of comparing them between groups is also merited.

Conclusion

In conclusion, our findings support the use of ASI measures to evaluate the association of alcohol use with QoL assessed using the WHOQOL-BREF. Our results demonstrate a negative association of severity of alcohol-related problems on QoL, especially in the physical and psychological domains, which suggests that the QoL measure must be considered to be a relevant outcome for the health of those subjects. Investigating QoL in the context of alcohol dependence is relevant because this disease is chronic. Biochemical markers and even abstinence may not reflect a patient's QoL, which may limit the allocation of resources and the evaluation of treatment outcomes. Within this context, the assessment of QoL might be a more accurate method to measure the impact of alcohol dependence on health and the costs and benefits of treatment [28]. We accordingly suggest that QoL measures should be used to complement a traditional clinical evaluation. Therapeutic interventions should address these problem areas not only to reduce substance use but also to significantly improve the QoL of alcoholics.

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