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**ABSTRACT**

**Introduction:** The problem of using addictive substances, especially alcohol in Indonesia, is still a serious health problem. Since 2013, data on the proportion of alcoholic drink consumption in Indonesia has been found to have increased in 32 provinces in Indonesia. Alcohol consumption not only causes physical problems, but also mental disorders, triggers acts of violence, and disturbs other aspects of life. One of the psychiatric disorders that arise due to the abuse of alcoholic beverages is depression. If not treated immediately, depression can lead to suicidal thoughts that threaten the individual and have an impact on those around him. The aim of this study was to examine the level of alcohol consumption and its relationship to the level of depression.

**Methods:** This study is an analytical study with a quantitative cross-sectional survey design. The sampling technique was carried out by purposive sampling using the AUDIT questionnaire for the level of alcohol consumption, and BDI-II for the level of depression. **Results:** The research sample was obtained as many as 30 respondents. The results of the two-variable analysis using the somer test showed that there was no significant relationship between the level of alcohol use and the level of depression. **Conclusion:** In this study, there was no statistically significant relationship between the level of alcohol use and the level of depression in individuals who used multiple substances.

1. **Introduction**

   The problem of using addictive substances, especially alcohol in Indonesia, is a health problem that needs attention. Data for 2018 shows that the proportion of alcoholic beverage consumption in Indonesia has increased over a period of 5 years. In general, an increase in the number of alcohol users was found in 32 out of 35 provinces in Indonesia[1]. This is consistent with the global trend where 38.3% of the population over the age of 15 are known to consume alcohol at least once a year. In 2014 the per capita consumption figure for alcoholic beverages worldwide was found to continue to increase[2]. In Indonesia alone, the per capita alcohol consumption reaches 0.6 liters with 0.8% of the population consuming alcohol excessively. The easier access to free alcohol and the increase in the socioeconomic status of the population are factors that influence the increase in alcohol users.

   Alcohol is a psychoactive substance that suppresses the function of the central system. Its consumption can cause dependence and cause changes in body systems both acutely and chronically[3]. Systemic disorders that can be caused include cirrhosis of the liver, pancreatic disorders, cancer, cardiovascular disease, and cognitive disorders. Heavy alcohol consumption can lead to decreased consciousness, stopping breathing and death. Acutely, alcohol causes disorientation associated with the risk of accidents and violent behavior[4]. Research shows 70% of prisoners are
known to have consumed alcohol before committing a crime, and 40% of domestic violence occurs under the influence of alcohol[5] [6] [7].

**Burden of illness** from alcohol use disorders is ranked third globally with 3.3 million deaths annually. Alcohol use also appears as a risk factor for 60 types of diseases, including depression. Depression is a psychiatric disorder most commonly found in alcohol dependence where the positive correlation in clinical patients reaches 50-70% [8] [9]. Alcohol abuse often co-exists with depression in mentally impaired individuals[9] [10]. In Australia, half of the individuals who consume alcohol and have mental health problems are known to have a depressive disorder[11]. Untreated depression can be fatal with depression being shown to be the largest predictor of suicide attempts in the alcohol-abusing population [12]. When compared with the normal population, individuals with comorbid disorders have lower effectiveness and are more at risk for disability [11].

The relationship between depression and alcohol has been investigated by several studies, among others, by Jeong et al (2015) in Korea and Yulianto (2018) in Indonesia with different results where Jeong et al found a positive correlation while Yulianto did not [8][13]. These findings are consistent with the results of a meta-analysis by Boden & Fergusson (2011) that alcohol and depression have a causative relationship where alcohol abuse is known to increase the risk of developing depression[14]. Alcohol consumption not only affects physical disorders, but also mental disorders. One of the mental disorders that can be encountered is depression. The effects of alcohol will increase in individuals who use benzodiazepines, so that the risk of the disorder also increases. Studies on alcohol and depression in multiple substance users have not been widely studied. Therefore this study aims to determine the relationship between the level of alcohol consumption and the level of depression in patients using multiple substances in Sleman, Yogyakarta.

2. Methods

This research is an analytic study with a cross-sectional design. Data were collected from June to July 2020 with a purposive sampling method. This study involved patients at a private psychiatric specialist practice in Ngloban Village, Ngaglik District, Sleman Regency, Yogyakarta. Characteristics of the sample were 17 to 70 years of age who experienced benzodiazepine dependence based on a psychiatric diagnosis, with a history of consuming alcohol at least once a week. This study excluded patients with severe cognitive impairment who were unable to complete a questionnaire.

The instruments used in this study were the Indonesian version of the Alcohol Use Disorder Identification Test (AUDIT) questionnaire used to assess alcohol dependence, and the Beck Depression Inventory (BDI-II) which aims to assess depressive disorders. In this study, univariate and bivariate analysis of the results were carried out using the somer test to determine the correlation between the two variables.

This study has received ethical approval from the Medical and Health Research Ethics Committee (MHREC) of the Faculty of Medicine, Public Health and Nursing, Gadjah Mada University.

3. Results

**Demographic characteristics of respondents**

A total of 30 respondents were obtained with 18 status unmarried (60%), 11 married people (36.7%) and 1 divorced (3.3%). The majority of respondents were high school graduates / equivalent, as many as 23 people (76.7%), 4 junior high school graduates / equivalent (13.3%), 1 elementary school graduate (3.3%), 1 did not complete elementary school (3.3%), and 1 graduate from academy / Diploma III / Bachelors degree (3.3%).

**Depression frequency distribution based on AUDIT and BDI II scores**

The frequency distribution of depression based on the AUDIT and BDI-II scores using the somers'd formula shows the incidence of depression has a value of $P = 0.053$ ($P > 0.05$) so it is statistically significant.
Frequency distribution of alcohol use and depression levels

The frequency description of the level of alcohol use with the level of depression can be seen in Table 4. In the non-depressed category patients, there were 14 respondents with 2 abstainers (14.3%), 4 low-risk drinkers (28.6%), 5 high-risk drinkers (35.7%), and 3 probable alcohol dependence (21.4%). In patients with mild depression category, there were 8 respondents with 4 low-risk drinkers (50%), 3 high-risk drinkers (37.5%), and 1 probable alcohol dependence (12.5%). Patients with moderate depression category, there were 6 respondents with 1 abstainer (16.7%), 1 low-risk drinkers (16.7%), 3 high-risk drinkers (50.0%), and 1 probable alcohol dependence (16.7%). In patients with major depression category, there were 2 respondents with 2 high-risk drinkers (100%).

Bivariate analysis

The results of the study carried out a bivariate analysis using the somer test between the variable level of alcohol consumption and the level of depression, which resulted in $P = 0.738$ ($P > 0.05$) so that the results were statistically significant.

4. Discussion

Various studies have shown a significant association between alcohol use and depression\cite{8} \cite{9} \cite{11}. However, in this study, the results of the analysis using the somer test showed the results of $P = 0.738$ so that there was no statistically significant relationship between the level of alcohol use and the level of depression in patients using multiple substances in Sleman, Yogyakarta. The absence of a positive correlation can be affected by the small number of samples and the sampling location. In Choi & Jeong's (2015) study, the study was conducted in a mental hospital, whereas in this study it was conducted in a private clinic of psychiatrists so that the scope of coverage was smaller\cite{8}. The smaller the number of samples associated with the more samples obtained, the greater the chance of the results associated with the two variables under study.

Even so, the results of this study are in line with Yulianto’s (2018) study that there is no significant relationship between the level of alcohol consumption and the level of depression in residents of Class II A Narcotics Prison in Yogyakarta\cite{13}. This can be caused by the condition of the subject in prison when the research was taking place was already in a state of alcohol abstinence, while depression related to alcohol is generally in the form of alcohol induced mood disorders. These alcohol-induced depressive symptoms subside and disappear with abstinence\cite{15} \cite{16}.

Another cause that affects this research is the sampling method. Due to the COVID-19 pandemic, there were limitations to face-to-face meetings so that the sampling was carried out through questionnaires filled out by respondents online. Filling in online has the potential for human errors such as incomprehension in interpreting each question in the questionnaire, and so on. The limitation of researchers in directly monitoring the process of respondents filling out the questionnaire is one possible reason the results obtained are not in line with previous studies.

5. Conclusion

There is no statistically significant relationship between the level of alcohol consumption and the level of depression in multiple substance users in Sleman, Yogyakarta. For future research it is recommended to use a larger sample size so that the data obtained is more varied. In addition to the future, it is also suggested to explore the relationship between variables using other methods such as qualitative design, case-control, and index interviews so that a more comprehensive understanding can be obtained.

6. References


13. Yulianto, H. 2018. Relationship between the level of alcohol use based on the AUDIT (Alcohol Use Disorders Identification Test) score with depression in the occupants of the Class IIA Narcotics Prison in Yogyakarta. Gadjah Mada University Online Journal

