

Frequency of depression in patients with non-alcoholic fatty liver disease

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ABSTRACT

Background: Non-alcoholic fatty liver disease (NAFLD) includes simple fatty change, hepatitis and cirrhosis. Patients with non-alcoholic fatty liver disease are at increased risk of arteriosclerosis, metabolic syndrome, cardiovascular and psychiatric disorders. Depressive disorders are among the prevalent psychiatric illnesses and pose public health problem. Depression is associated with poor outcome in the treatment of non-alcoholic fatty liver disease especially with lifestyle modifications. The aim of this study is to determine the frequency of depression in patients with NAFLD.

Patients and Methods: Total of 170 newly diagnosed patients with non-alcoholic fatty liver disease based on ultrasound were included in the study. The frequency of depression was calculated using the Patient Health Questionnaire (PHQ-9) scale and other causes of depression particularly chronic diseases other than nonalcoholic steatohepatitis (NASH) and family history of psychiatric illness were excluded. A score of > 20 was suggestive of severe depression.

Results: Average age was 39.8 ± 8.8 years. 109 patients (64.1%) were male. Of this population, 41 patients (24.1%) suffered from depression according to depression scale PHQ-9 score. There were no effects of age, gender, socio-economic status on depression in patients with fatty liver disease.

Conclusion: It is concluded that depression is more frequent in patients with non-alcoholic fatty liver disease.

Keywords:

Depression; non-alcoholic; fatty liver; non-alcoholic steatohepatitis.

INTRODUCTION

Non-alcoholic fatty liver disease (NAFLD) includes nonalcoholic fatty liver and steatohepatitis.¹ Patients with NAFLD are at increased risk of arteriosclerosis, metabolic syndrome, cardiovascular and psychiatric disorders.²⁻⁷ NAFLD thought to be benign disease, is now proved to cause significant morbidity as 20% of patients with nonalcoholic fatty liver disease have steatohepatitis which can predispose patients to cirrhosis and hepatocellular carcinoma and 25% adults in the general population in western countries have nonalcoholic fatty liver.⁸ Depression is thought to be a global public health problem particularly in the developed countries, where depression is the most important cause of morbidity.⁹ Depression in primary care is still a largely underdiagnosed and undertreated

condition and patients with chronic illnesses are particularly vulnerable to depression.⁹ Depressive mood can be the result of longstanding diseases especially chronic diseases.¹⁰⁻¹² In a study, depression was markedly associated with severe hepatocyte ballooning (probability ratio test, p-value = 0.0201) and clinical and subclinical depression was found in 53% and 14% of patients, respectively.¹¹ This study also showed that the severity of depression is related to race and ethnicity.¹¹ Depression is associated with poor outcomes in the treatment of non-alcoholic fat liver disease even with lifestyle modifications.¹³ The frequency of depression in NAFLD patients also differs in different populations.¹⁴ Knowing the extent of depression, will aid in managing the patient and prevent the development of complications like compromised quality of life and more advanced liver disease.¹⁴ The aim of this study was to determine the frequency of depression in patients with NAFLD.

Competing interest: The authors have declared no competing interests exist.

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PATIENTS AND METHODS

One hundred and seventy non-alcoholic fatty liver disease patients newly diagnosed on the basis of abdominal ultrasonography showing bright hepatic echoes and increased hepatic echogenicity were enrolled in the study.¹⁵ The candidates were interviewed by the researcher. Depression was labeled as per PHQ-9 questionnaire scale and other causes of depression particularly chronic diseases other than NASH and family history of psychiatric illness were excluded. A score of 5 to 9 was used to label severity of depression as mild and score more than 20 as severe depression.¹⁶ Data was analyzed by SPSS Version 20. Qualitative data like demographics such as gender and the existence of depression (yes or no) were presented as frequencies and percentages. Quantitative data such as age and depression score were presented as averages and deviations. The data was stratified for age, sex and socioeconomic status. The Chi square test was used to analyze the data. The p-value ≤ 0.05 was considered statistically significant.

RESULTS

Out of 170 patients included in this study, 109 patients (64.1%) were male and 61 patients (35.9%) were female, mean age was 39.8 ± 8.87 . Among study population, 35 patients (20.6%) were under 30 years age and rest of 135 (79.4%) were above 30 years of age. Eighty-four patients (49.4%) had low socioeconomic status, 64 patients (37.6%) had middle socioeconomic status, while the remaining 22 (12.9%) belong to a high socioeconomic status. Among all 170 patients, 41 patients (24.1%) had depression (Figure 1). On cross-tabulation of gender and depression, results did not appear significant (p-value=0.392) on using Pearson Chi Square Test (Table 1). When socioeconomic status was cross tabulated with depression, the result came insignificant (p-value=0.6) on using Fisher's exact test. The socioeconomic status has no significant impact on depression (Table 1).

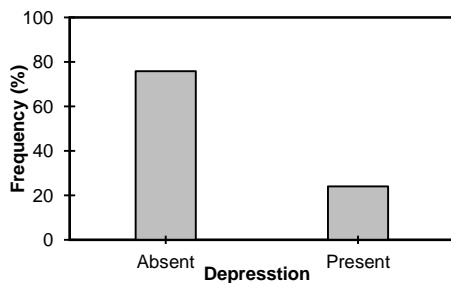


Figure 1. Frequency distribution of sampled population by depression

Table 1. Characteristics of research participants suffering from non-alcoholic fatty liver disease

Characteristics	Depression		p-value*
	Absent	Present	
Gender			
Male	85	24	0.392
Female	44	17	
Socioeconomic status			

Lower	62	23	0.601
Middle	51	13	
Upper	17	5	

*chi-square was used to calculate p-value.

DISCUSSION

Depression is a condition of bad mood and aversion to activity that affects a person's thought process, behavior, emotions and physical well-being. Depressed mood can be the result of long-term illnesses especially chronic diseases.¹⁰⁻¹² Depression is a major public health problem and the most important predictor of mortality and functional disability. There are no local studies being conducted in Pakistan to determine the frequency of depression in patients with NAFLD. Depression leads to poor results in the treatment of non-alcoholic fatty liver disease and optimal depression treatment improves outcomes for most of the patients.¹³ Patients with chronic liver disease and associated depression may be prone to more complications like compromised quality of life and more advanced liver disease.^{14,17} In this study, 41 out of 170 non-alcoholic fatty liver patients suffered from clinical depression (24.1%) measured by patient health questionnaire depression scale (PHQ-9). It shows a high cumulative percentage. These results correspond to the results in one of the previous studies in which 32 out of 258 patients with non-alcoholic fatty liver biopsies were found to suffer from depression (12.4%), diagnosed according to the criteria of diagnosis and statistical manual of mental disorders.¹⁷ Another study shows that major depressive and anxiety disorders are more common in patients with nonalcoholic steatohepatitis and are related to more advanced hepatic histological abnormalities.¹⁸ In this study, 109 patients (64.1%) were male and 61 (35.9%) female. On cross-tabulation of gender with depression, results did not appear significant. It implies that both genders are equally prone to be affected by depression. Likewise, when socioeconomic status was tabulated with depression, the result came to be insignificant. It also implies that the distribution of depression has no significant difference in different socioeconomic classes. The limitations of this study include only one study center and ultrasonographic diagnosis of non-alcoholic fatty liver disease which can be improved with multicenter trial with larger sample size.

CONCLUSION

It is concluded that depression is more frequent in patients with non-alcoholic fatty-liver disease. Further studies should be encouraged to develop more effective life style modification programs particularly in patients with major depressive disorders to achieve therapeutic goals.

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