

A NEW INSIGHT INTO THE DIFFERENCE AMONG ALCOHOLIC AND NON-ALCOHOLIC PATIENTS USING THE LIVER DISEASE HEALTH RELATED QUALITY OF LIFE**Durga Devi Vusurumurthy^{1*}, Gopal Atmakuri^{1*}, Sindhu Madhuri Laghimsetty¹, Sravani Yangalasetty², Ravi Naga Lekhini², Srinivasa Rao D³, Venkata Rama Rao Nallani⁴ and Rama Rao Nadendla⁵**¹Department of Pharmacy Practice, Chalapathi Institute of Pharmaceutical Sciences, Lam, Guntur, Andhra Pradesh, India.²Assistant Professor, Department of Pharmacy Practice, Chalapathi Institute of Pharmaceutical Sciences, Lam, Guntur, Andhra Pradesh, India.³HOD and Professor, Department of General Medicine, Government General Hospital, Guntur.⁴HOD, Department of Pharmacy Practice, Chalapathi Institute of Pharmaceutical Sciences, Lam, Guntur, Andhra Pradesh, India.⁵Principal of Chalapathi Institute of Pharmaceutical Sciences, Lam, Guntur, Andhra Pradesh, India.***Corresponding Author: Durga Devi Vusurumurthy**

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ABSTRACT

Liver disease refers to any disorder of the liver. The liver is a large organ in the upper right abdomen that aids in the digestion and removes waste products from the blood. Liver disease includes Cirrhosis, Inflammation [hepatitis] or non-infectious causes [chemical or autoimmune hepatitis, liver cancer, metabolic disorders. Since the liver is the central site for the metabolism of various macro and micro nutrients, the liver disease leading to the dysfunction of the liver and have major metabolic and nutritional impacts. Evaluation of quality of life was gaining importance as the impact of the disease on the patients well-being and functioning may be enormous^[1] Thus the main aim of the study was to assess and compare the quality of life in alcoholic liver disease patients and non-alcoholic liver disease patients.

KEYWORDS: Alcoholic liver disease, Non-alcoholic liver disease, HRQOL, SF-36.**INTRODUCTION**

Liver disease refers to any disorder of the liver. The liver is a large organ in the upper right abdomen that aids in digestion and removes waste products from the blood. Liver diseases include Cirrhosis, Inflammation (hepatitis) or non-infectious causes (chemical or autoimmune hepatitis, liver cancer, metabolic disorders. The burden of liver disease is increasing, largely due to the combined impacts of alcohol related liver disease [ARLD], non-alcohol fatty liver disease [NAFLD] and viral hepatitis.^[5] Since the liver is the central site for the metabolism of various macro and micro nutrients, the liver diseases leading to the dysfunction of the liver and have major metabolic and nutritional impacts. Assessment of quality of life was gaining importance as the impact of the disease on the patients well-being and functioning may be enormous.^[1] Day-to-Day quality of life is influenced not only by the primary disease but also by its management and disease related complications. In liver disease, the severity and progressive nature of the disease are likely to have a considerable negative impact on HRQOL. The eventual aim of managing patients with liver disease is not prolong life with poor quality, but to

improve and sustain a reasonably good quality of life.^[2]

The term health related quality of life reflects the impact of the disease upon a person's quality of life.^[3] Patients with liver disease may suffer from anxiety, depression and other emotional problems. The multidimensional concept of HRQOL includes different domains relating to emotional, mental, social and physical problems in the context of the disease and its management^[4] Measuring HRQOL can quantify the impact of the disease and its treatment on the individual and is increasingly recognised as an important outcome.^[5] Thus the main aim of the study was to assess and compare the quality of life in alcoholic liver disease patients and non-alcoholic liver disease patients.

MATERIALS AND METHODSStudy Place: Department of General Medicine, GGH, Guntur.Period of study: October 2020-February 2021Study Design: Prospective studySample Size: 300

Sample size=

4pq/d2

p= prevalence
 q=1-p
 d= degree of error /accuracy

Materials used

- 1] Data collection form
- 2] Patient consent form
- 3] SF-36 Questionnaire

Inclusion Criteria

- Patients who are diagnosed with liver diseases.
- Subjects admitted in General Medicine department.
- Patients of age 18-60 years both male and female.
- Patients who concerned to participate in the study.
- Those who are able to understand English or local language

Exclusion criteria

- Female patients with pregnancy.
- Patients who are diagnosed with HIV/AIDS, TB, GI Infection.

STUDY PROCEDURE

The study will be conducted after getting approval from the IHEC and obtaining informed consent from patients. Then patients will be screened based on inclusion and exclusion criteria. Patients who satisfy inclusion criteria will be included in the study. After including the subjects into the study, the data will be collected in the designed validated data collection form. The SF-36 Questionnaire was used to assess the quality of life in alcoholic and non-alcoholic liver disease patients. The collected data was tabulated and interpreted using suitable statistics SPSS software.

SF- 36 questionnaire

SF-36 is a quality-of-life scale, it is the short form of 36 health survey questions which covers eight domains of health, that used to indicate the health status of particular populations, to help measure impact of clinical and social factors and help with service providing. Culture specific data are required to calculate SF-36 normal based scores. The SF-36 used to measure health at the individual level in clinical practice and research at the population level for health policy evaluations and general population surveys.

Patients or individuals are asked to fill out the questionnaire or tick the boxes by themselves and then it is scored by clinician or researcher.

The eight domains of health are

1. Limitations in physical activities because of health problems
2. Limitations in social activities because of physical health problems
3. Limitations in usual role activities because of physical or emotional problems
4. Vitality (Energy/ fatigue)
5. General mental health (Emotional well-being)

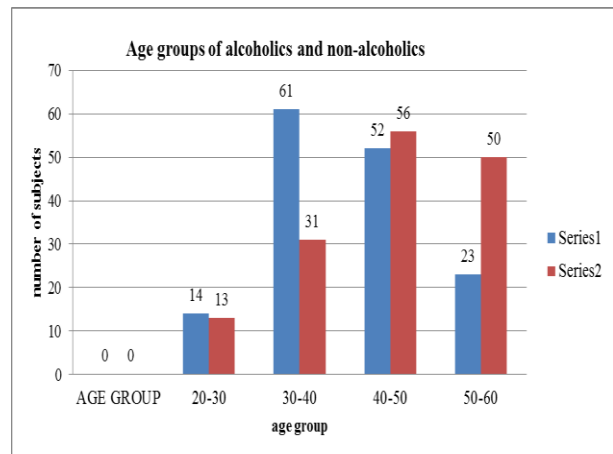
6. Limitation in usual role activities because of emotional problems (Social functioning)
7. Bodily pain
8. General health perceptions

RESULTS

Table 1: Age groups of alcoholics and non-alcoholics.

AGE GROUP	ALCOHOLICS AGE [a=150]	Non-Alcoholics AGE[b=150]
20-30	14(9.33%)	13(8.66%)
30-40	61(40.66%)	31(20.66%)
40-50	52(34.66%)	56(37.33%)
50-60	23(15.33%)	50(33.33%)

Table 3 depicts that among 150 alcoholics(cases), 14(9.3%) are 20-30 age group,61(40.6%) are 30-40 age group, 52(34.66%) are 40-50 age group, 23(15.33%) and among 150 Non –alcoholics(controls), 13(8.66%) are 20-30 age group, 31(20.66%) are 30-40 age group, 56(37.33%) are age group, 50(33.33%) are 50-60 age group is mentioned in the table 1.1. Alcoholics (cases) are high in 30-40 age group and Non –Alcoholics [controls] are high in 40-50 age group.

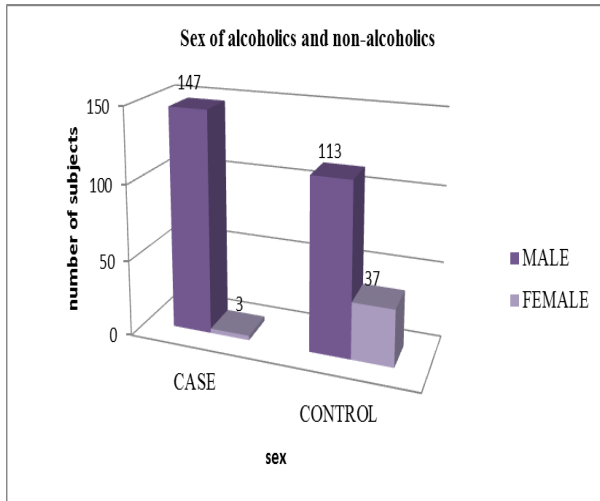


“Fig.1”: Age groups of alcoholics and non-alcoholics.

Table 2: Sex of alcoholics and non-alcoholics.

SEX	ALCOHOLICS [a=150]	NON-ALCOHOLICS [b=150]
MALE	147	113
FEMALE	3	37

Table 4 depicts that among 150 Alcoholics (case), 147 are male, 3 are female and among non-Alcoholics (control), 113 are male, 37 are female is mentioned in table. More no of male subjects are present in both case and control.

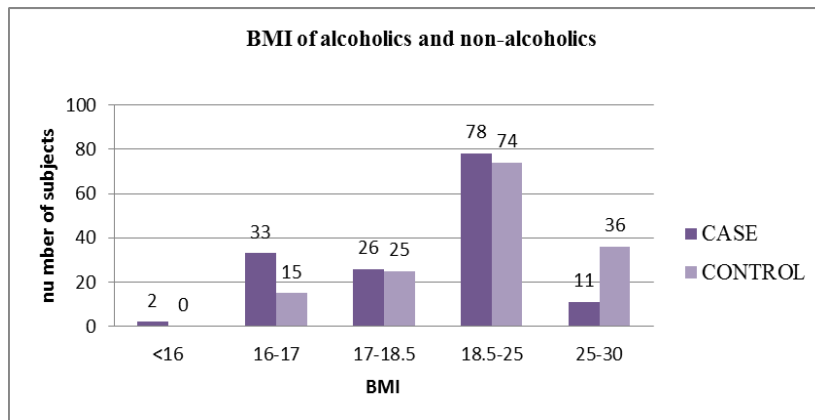


“Fig.2”: Sex of alcoholics and non-alcoholics.

Table 3: BMI of alcoholics and non-alcoholics.

BMI	ALCOHOLICS [a=150]	NON-ALCOHOLICS [b=150]
<16	2(1.33%)	
16-17	33(22.00%)	15(10.00%)
17-18.5	26(17.34%)	25(16.67%)
18.5-25	78(52.33%)	74(49.34%)
25-30	11(7.34%)	36(24.00%)

Table 5 depicts that among 150 Alcoholics (case), 2(1.33%) are less than 16 BMI, 33(22.00%) are 16-17 BMI, 26(17.34%) are 17-18.5 BMI, 78(52.33%) are 18.5-25 BMI, 11(7.34%) are 25-30 BMI. Among 150 Non-Alcoholics (control), 0(0%) are less than 16 BMI, 15(10.00%) are 16-17 BMI, 25(16.67%) are 17-18.5 BMI, 74(49.34%) are 18.5-25 BMI, 36(24%) are 25-30 BMI is mentioned table 1.3. In both case [alcoholics] and control [non-alcoholics] 18.5-25 BMI subjects are more.

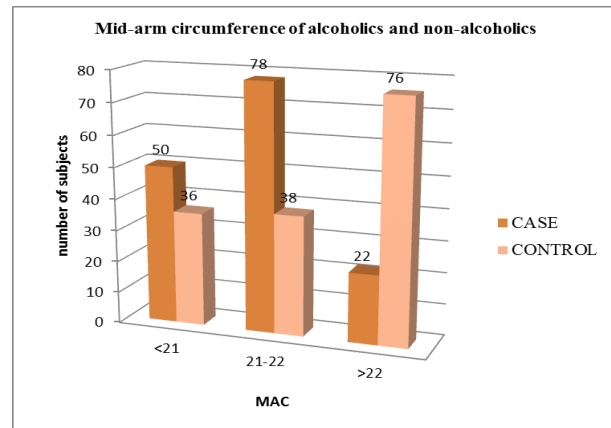


“Fig.3”: BMI of alcoholics and non-alcoholics.

Table 4: Mid-arm circumference of alcoholics and non-alcoholics.

MAC	ALCOHOLICS [a=150]	NON-ALCOHOLICS [b=150]
<21	50(33.34%)	36(24.00%)
21-22	78(52.00%)	38(25.34%)
>22	22(14.67%)	76(50.67%)

Table 6 depicts that among 150 Alcoholics (cases), 50(33.34%) are less than 22 MAC, 78(52.00%) are 21-22 MAC, 22(14.67%) are greater than 22 MAC and among 150 Non-alcoholics (control), 36(24.00%) are less than 22 MAC, 38(25.34%) are 21-22 MAC, 76(50.67%) are greater than 22 MAC is mentioned in the table 1.4. In alcoholics (case), 21-22 MAC subjects are high where in non-alcoholics greater than 22 MAC are high.



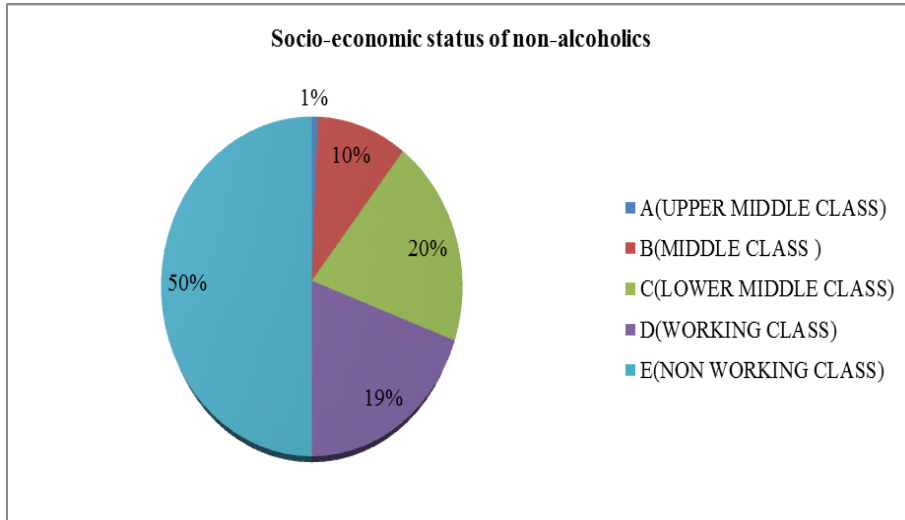
“Fig.4”: Mid-arm circumference of alcoholics and non-alcoholics

Table 5: Socio-economic status of alcoholics and nonalcoholics.

SOCIO-ECONOMIC STATUS	ALCOHOLICS [a=150]	NON-ALCOHOLICS [b=150]
A (UPPER MIDDLE CLASS)	0(0.00%)	1(0.66%)
B (MIDDLE CLASS)	13(8.66%)	15(10.00%)
C (LOWER MIDDLE CLASS)	22(14.66%)	30(20.00%)
D (WORKING CLASS)	29(19.33%)	29(19.33%)
E (NON-WORKING CLASS)	86(55.33%)	75(50.00%)

Table 7 depicts that among 150 non-alcoholics (control), 1(0.66%) are (A) upper middle class, 15(10.00%) are (B) middleclass, 30(20.00%) are (C) lower middle class,

29(19.33%) are (D) working class, 75(50.00%) are (E) non-working class was mentioned in the table 1.5.1. Non-Working-class subjects are high in number.



“Fig.5”: Socio-economic status of non-alcoholics.

Table 7 depicts that among the 150 Alcoholics (case), 0(0.00%) are upper middle class, 13(8.66%) are middle class, 22(14.66%) are lower middle class, 29(19.33%)

are working class, 86(55.33%) are non-working class is mentioned in the table 1.5.2. Non-working-class Alcoholic subjects are high in number.

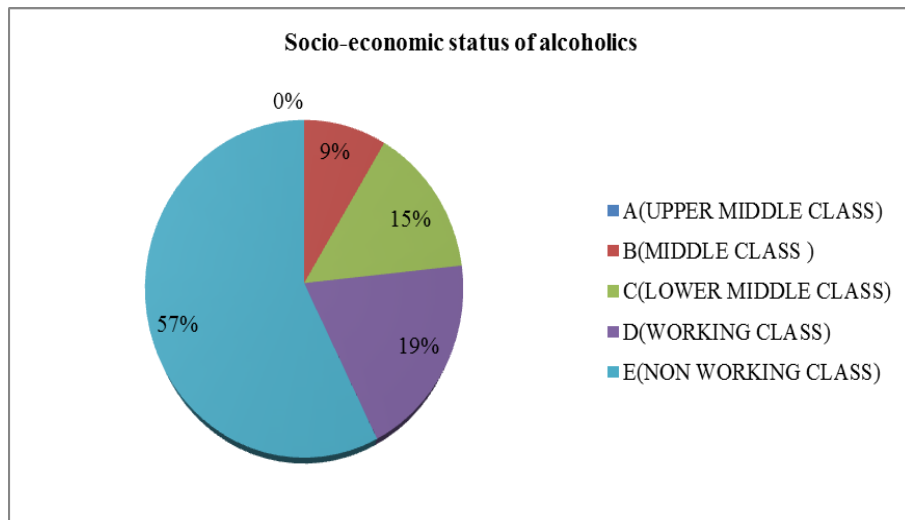


Fig. 6: Socio-economic status of Alcoholics.

SF-36

P value and statistical significance:

The two tailed P values is less than **0.0001**
By conventional criteria this difference is considered to be extremely statistically significant.

Confidence interval

The mean of group one minus group two equals -**39.2278**

95%confidence interval of this difference: from -**51.0607 to -27.3948**

Intermediate values used in calculation

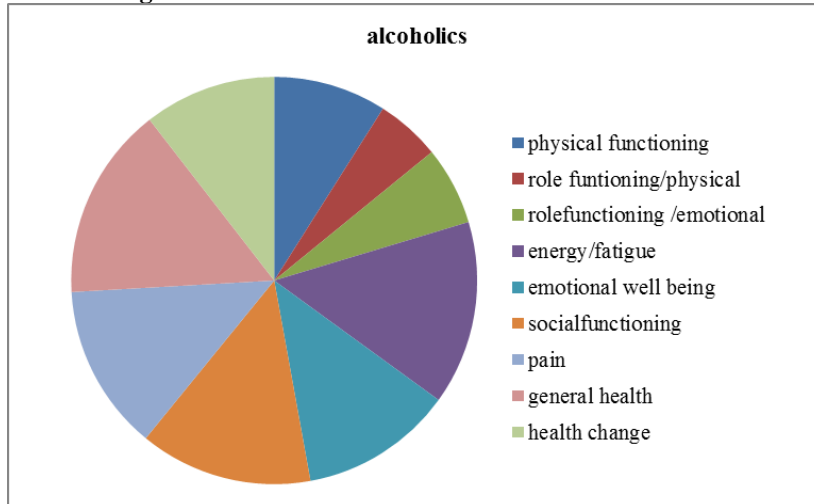
t = 7.0277

df = 16

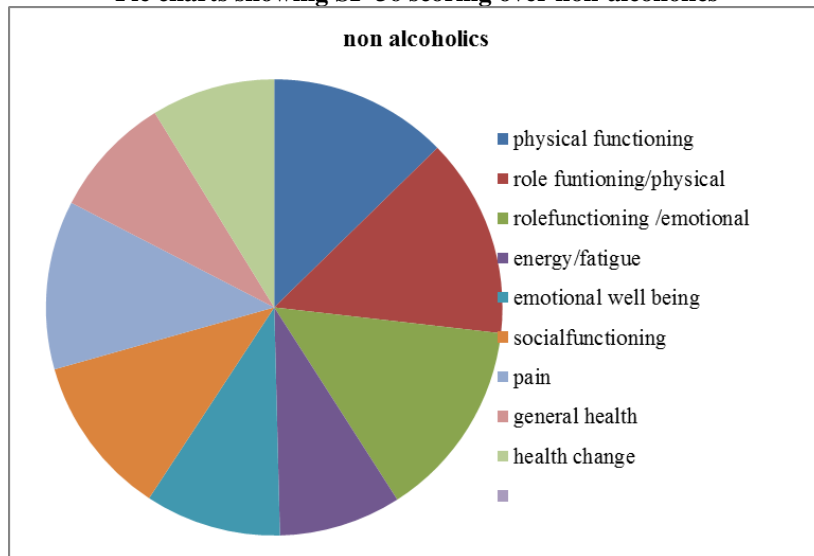
Standard error of difference = 5.582

Group	Alcoholic Group [a=150]	Nonalcoholic Group [b=150]
Mean	28.5678	67.7956
Sd	9.4206	13.8443
Sem	3.1402	4.6148
N	9	9

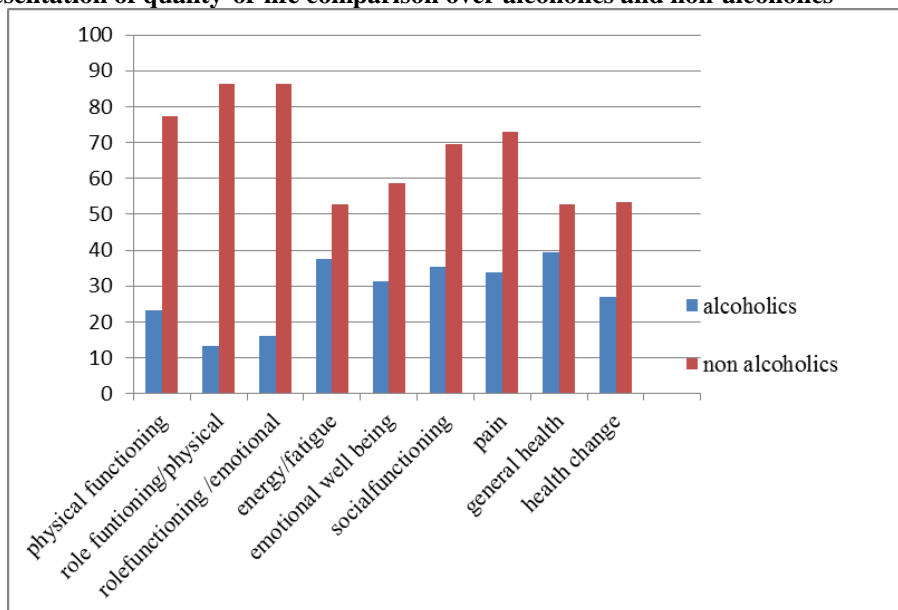
Pie charts showing SF-36 scoring over alcoholics

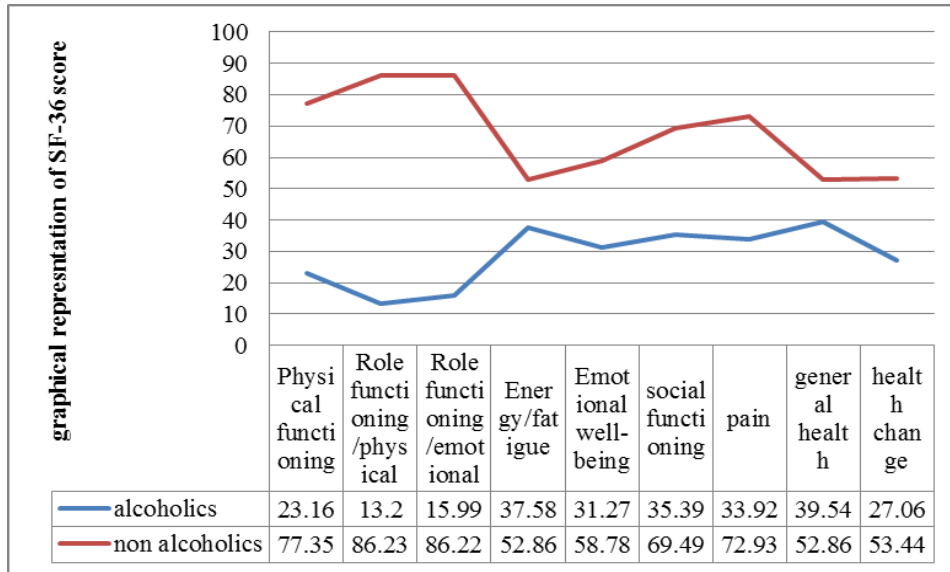


Pie charts showing SF-36 scoring over non-alcoholics



Graphical representation of quality-of-life comparison over alcoholics and non-alcoholics





The above graph showing the different quality of life over alcoholic and non-alcoholic liver diseases cases.

The Physical functioning non-alcoholics scored 77.35%, when compared to alcoholics scored 23.16%, this explains the physical functioning over non-alcoholics is more balanced than alcoholics. When come to Role limitation due to physical health non-alcoholics scored 86.23%, when compared to alcoholics scored 13.2%, this explains the Role limitation due to physical health alcoholics exhibits high limitations due to physical health when compared to non- alcoholics. In case of Role limitation due to emotional problems non-alcoholics scored 86.22%, when compared to alcoholics scored 15.99%, this explains the Role limitation due to emotional problem alcoholics exhibits high limitations due to emotional problems when compared to non-alcoholics. In the domine Energy\ Fatigue non-alcoholics scored 52.86%, when compared to alcoholics scored 37.58%, this explains that alcoholics exhibiting good energy and fatigue, but non- alcoholics score some wart better than alcoholics. Emotional wellbeing non-alcoholics scored 57.78%, when compared to alcoholics scored 31.27%, this explains non- alcoholics are emotionally strong and in good when compared to alcoholics. Social functioning non-alcoholics scored 69.49%, when compared to alcoholics scored 35.39%, this explains alcoholics are 34.1% less socially in active when compared with non- alcoholics. When it comes to Pain less score indicates high pain non-alcoholics scored 72.93%, when compared to alcoholics scored 33.92%, this explains alcoholics experiencing more pain mentally and physically when compared to non- alcoholics.

In case of general health non-alcoholics scored 52.86%, when compared to alcoholics scored 39.54%, this explains general health in both groups is somehow decreasing when compared to non- alcoholics, alcoholics are more effected. Finally, health changes that led from these eight domains alcoholics scored very less 27.06% when compared to non- alcoholics scored

53.44% that explains alcoholic liver disease patients undergo highly sometimes drastic health changes.

DISCUSSION

A Prospective study was carried out on **A NEW INSIGHT INTO THE DIFFERENCE AMONG ALCOHOLIC AND NON-ALCOHOLIC PATIENTS USING THE LIVER DISEASE HEALTH RELATED QUALITY OF LIFE**, 300 patients met the inclusion criteria and were included in the study. The Primary Objective of the study is to evaluate the health related quality of life in alcoholic and non-alcoholic liver disease patients.

SF-36 QUESTIONNAIRE was used for the assessment of quality of life based on the functional status.

In case of general health non-alcoholics scored 52.86%, when compared to alcoholics scored 39.54%, this explains general health in both groups is somehow decreasing when compared to non- alcoholics, alcoholics are more effected. Finally, health changes that led from these eight domains alcoholics scored very less 27.06% when compared to non- alcoholics scored 53.44% that explains alcoholic liver disease patients undergo highly sometimes drastic health changes.

In few studies, **N. Panagaria et al [2017] have conducted a study on “Quality of life and nutritional status in alcohol addicts and patients with chronic liver disease.”** it was proved that patients with liver disease scored significantly lower on quality of life when compared to alcohol addicts.

Similarly few studies were showed that the alcoholic liver disease subjects have significantly decreased quality of life than non-alcoholic liver disease subjects with a two-tailed P-value (P< 0.0001).

Srinivasan Dasarathy et al [2016] have conducted a study on “Nutrition and Alcoholic Liver Disease:

Effects of Alcoholism on Nutrition and Nutritional Therapies for Alcoholic Liver Disease.”

Our results showed that the alcohol liver disease subjects have significantly decreased quality of life than non-alcoholic liver disease subjects with a two-tailed P-value ($P < 0.0001$).

Janani K, Mayank Jain, Joy Vargese et al [2018]. “Health-related quality of life in liver cirrhosis patients using SF-36 and CLDQ questionnaires”.

CONCLUSION

Based on the results obtained in the study, we concluded that the alcoholic liver disease patients have shown significantly decreased quality of life than non-alcoholic liver disease patients. So, we conclude that pharmaceutical care and Patient Counselling by using patient information leaflet plays a vital role in improving the quality of life and prevention of complications of the liver disease.

ETHICAL MATTERS

The study was conducted after getting approval from the ethical committee [IHEC] with ref.no-GMC/IEC/381/2020. Informed and written consent was obtained from the patients before completing the questionnaire.

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