

# Health-Related Behavioural Counselling As A Remedial Measure For Cirrhosis Patients

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## Abstract

The medical terminology for scarring of the liver is called cirrhosis. Due to scarring of tissues the liver is unable to perform its functions properly. There is no cure for cirrhosis but the progression can be delayed or complications can be managed. Apart from medication, lifestyle changes are also advised and the present study assesses the impact of health-related behaviour counselling in the management of cirrhosis. This study was performed on 100 liver cirrhosis patients. The selected sample was divided into two equal groups with one being named the experimental and the other being the control group. The patients placed in the experimental group were given three months of health-related behaviour counselling. The score on the Fantastic Lifestyle Checklist was used to assess the changes in health-related behaviour while weight changes were observed through anthropometric data. The liver profile pathological test provides data on the status of enzymes. The data were collected twice. Results revealed that the weight status of male patients with cirrhosis of the liver showed significant signs of decreasing trend after three months of health-related behaviour counselling program. The mean SGOT and SGPT enzyme levels showed substantial changes after three months of health-related behaviour counselling program with the majority of the subjects showing normal values on SGOT and SGPT profile test. The effect of three months of health-related behavioural counselling was observed on the lifestyle choices of male cirrhosis patients. It was concluded that lifestyle counselling gives a boost to better health-related behaviour through diet, physical exercise, and limiting consumption of alcohol and tobacco apart from other emotional and social issues that contribute towards weight management and thereby maintaining the recommended levels of SGOT and SGPT enzymes. Hence healthy lifestyle choice is an answer for the management of cirrhosis in male patients.

**Keywords:** Cirrhosis, lifestyle, SGOT, SGPT

## INTRODUCTION :

One of the glaring public health issues is a liver disease because India contributes about 18.3% of liver diseases related deaths in the world. Even more the contribution of liver cirrhosis to the overall burden is also increasing steadily in India. Liver disease as the term suggests is related to conditions that affect the smooth functioning of the liver. Liver diseases can be classified into various forms such as viral hepatitis or more severe such as

cirrhosis. It is a late-stage of liver disease which often associated with hepatitis or long-term alcohol consumption. Liver damage can occur due to several conditions and every time the liver tries to repair itself but in this process scar tissue formation takes place. When there are too many scar tissue formations the functions of the liver are compromised and the condition is called cirrhosis. In this condition, there are more scar tissues than healthy ones in the liver. Stage I cirrhosis

is associated with inflammation of the liver and when this inflammation is not treated or managed it may progress to stage II i.e. scarring, stage III cirrhosis and subsequent liver failure. In compensated cirrhosis, the liver is still left with enough healthy cells to manage the need of our body. The probability of reversing cirrhosis is very low but if diagnosed and managed early it can be prevented from progressing into a more deadly stage. The diagnosis of liver disease is often done with a liver profile assessment. SGOT is an enzyme which is found in the liver and other tissues of our body. Its high level is indicative of liver damage. It is also called aspartate transaminase and serum glutamic-oxaloacetic transaminase respectively. The SGOT or AST test is a part of liver profile assessment and it shows the amount of liver enzyme in our blood. This test is helpful for medical professionals to evaluate damaged liver cells because when the liver cell gets damaged, the SGOT enzyme comes into the bloodstream and thereby shows elevated SGOT. The normal range for this test is 15 to 40. SGPT also known as alanine transferase and serum glutamate pyruvate transaminase is an enzyme found in the liver and other tissues. The normal range of SGPT is 10 to 40 while very high levels indicate liver disease. Both of these enzymes are critical indicators of liver health.

Apart from proper medication, lifestyle changes are also advised to control liver disease to advance to the next stage. It has been advocated that certain lifestyle changes can prevent further damage to the liver. There are studies in which therapeutic lifestyle changes were found to be useful in managing liver disease such as cirrhosis. But these studies are conducted

abroad and due to diverse socio-cultural conditions in India, it is essential to conduct a region-specific study to assess the role of health-related behavioural counselling as a remedial measure for cirrhosis patients.

### **REVIEW OF LITERATURE**

Cohen and Kaplan (1979) in their study reported that when the SGOT/SGPT ratio is higher than 2 it is highly likely that the patient is consuming excessive alcohol and may be suffering from cirrhosis. Pang et al. (2022) in their study reported that high-risk lifestyle behaviour may lead to the progression of liver disease to a more deadly stage. Fernandez et al. (2022) in a meta-review concluded that lifestyle changes with more emphasis on proper exercise regimen and diet can improve liver enzymes through weight loss which effectively reduced inflammation and fibrosis in patients. Viveiros (2021) reported a positive role of lifestyle in the management of the liver disease. They reported that changes in dietary habit and improved health-related behaviour was useful in reducing liver-related complications. Lahelma et al. (2021) in their study concluded that lifestyle factors should also be included in the diagnosis of obese non fatty liver disease patients with fibrosis. Katsagoni et al. (2020) in their study reported that an intervention program consisting of diet management and exercise led to significant weight loss and improved liver functions. Mishra et al. (2020) conducted a study on cirrhosis of the liver in patients from Orissa. They found that the major cause of cirrhosis of the liver is alcohol-induced while the least was non-viral causes. Goyal et al. (2018) constructed an etiological profile of patients suffering from cirrhosis of the

liver and the study setting was Northern India. They found that alcohol along with hepatitis C is the leading cause of cirrhosis and preventive measures should be taken so that cirrhosis-induced mortality and morbidity can be reduced. Anju and Shah (2017) in their study of liver disease patients with and without a history of excessive alcohol consumption reported that the group with alcoholic cirrhosis patients showed severely compromised SGOT and SGPT levels as compared to a group of non-alcoholic cirrhosis patients. Mokdad et al. (2014) in epidemiology reported that India's contribution to global deaths due to liver disease is 18.3%. Sharma et al. (2008) reported that the leading cause of cirrhosis of the liver in Himachal Pradesh is alcohol while hepatitis B, autoimmune disease and NASH were other significant contributors.

#### **OBJECTIVES:**

- (a) To analyse the impact of health-related behavioural counselling on the weight status of male patients suffering from cirrhosis of the liver.
- (b) To analyse the impact of health-related behavioural counselling on liver enzyme levels of male patients suffering from cirrhosis of the liver.
- (c) To analyse the impact of health-related behavioural counselling on the lifestyle of male patients suffering from cirrhosis of the liver.

#### **HYPOTHESIS**

1. Three months of health-related behavioural counselling will reduce the weight of male patients suffering from cirrhosis of the liver.
2. Three months of health-related behavioural counselling will effectively control the SGOT and SGPT levels in

male patients suffering from cirrhosis of the liver.

3. Three months of health-related behavioural counselling will improve the lifestyle of male patients suffering from cirrhosis of the liver.

#### **METHODOLOGY**

##### **Sample:**

100 patients suffering from liver cirrhosis were selected from the Raipur district of Chhattisgarh. These patients were enrolled in tertiary hospitals located in this area. The age group of the selected patients was 35 to 55 years. Purposive sampling was used for the selection of the sample.

##### **Tools**

A standard weighing machine was used for anthropometric assessment.

The SGOT and SGPT enzyme levels were assessed as reported by pathology lab report through Spectrometry.

To assess lifestyle changes FANTASTIC lifestyle checklist was used.

The health-related behaviour counselling program of three months was meticulously prepared based on factors given in the FANTASTIC lifestyle checklist.

##### **Design**

This study uses a pre-post design with the experimental and control group.

##### **Procedure**

The selected patients suffering from cirrhosis of the liver were divided into two groups on a random basis. One group of 50 patients termed as experimental received three months of health-related behavioural counselling while the other group of 50 patients termed as control were not given the said counselling. The data were collected twice for this pre-post design study.

**DATA ANALYSIS:****Table 1****Pre-Post Paired Comparison of Body Weight of Male Patients with Cirrhosis of the Liver**

Groups	N	Body Weight (Kg.)				Mean Difference (Post-pre test)	't'
		Pre Test		Post Test			
		Mean	S.D.	Mean	S.D.		
Experimental Group	50	63.22	10.93	62.70	10.27	- 0.52↓	3.27 (p<.01)
Control Group	50	63.26	7.07	63.24	7.12	- 0.014↓	0.39 (p>.05)

**Table 2****Comparison of Gain Score (Post - Pre Test) on Weight of Male Patients with Cirrhosis of Liver in Two Study Groups**

Weight	Experimental Group (N=50)		Control Group (N=50)		't'	Sig.
	Mean	S.D.	Mean	S.D.		
Gain Score (Weight)	-0.52	1.11	-0.014	0.24	3.11	.01

A perusal of table 1 revealed that the pre-test mean body weight of male patients with cirrhosis of the liver from experimental group was 63.22 kg while the standard deviation was 10.93. The post-test mean body weight of male patients suffering from cirrhosis of the liver from experimental group was 62.70 kg while the standard deviation was 10.27. It means that the post-test mean weight of male patients with cirrhosis of the liver in the experimental group was significantly reduced as compared to the pre-test mean weight of these patients in the experimental group. The calculated  $t=3.27$  which is statistically significant ( $p<.01$ ) scientifically indicates that the weight of male patients with cirrhosis of the liver in the experimental group decreased after the

administration of 03 months of health-related behavioural counselling. A perusal of table 1 revealed that the pre-test mean body weight of male patients suffering from cirrhosis of the liver placed in the control group was 63.26 kg while the standard deviation was 7.07. The post-test mean body weight of male patients suffering from cirrhosis of the liver placed in the control group was 63.24 kg while the standard deviation was 7.12. It means that the post-test mean weight of male liver disease patients in the control group differ very little as compared to the pre-test mean weight but the result is statistically non significant ( $t=0.39$ ,  $p>.05$ ). The result has statistical support as shown in table 2.

**Table 3**  
**Paired Comparison of SGOT Enzyme of Male Patients with Cirrhosis of the Liver**

Groups	N	SGOT (IU/L)				Mean Difference	't'
		Pre Test		Post Test			
		Mean	S.D.	Mean	S.D.		
Experimental Group	50	394.88	190.06	46.40	68.81	348.48↓	12.43 (p<.01)
Control Group	50	389.48	175.43	522.60	186.64	133.12↑	5.73 (p<.01)

A perusal of table 3 revealed that the post-test mean SGOT (IU/L) of male cirrhosis patients of the experimental group was significantly decreased as compared to the pre-test mean SGOT (IU/L). The post-test mean SGOT (IU/L) of male cirrhosis patients of the control group was

significantly higher as compared to the pre-test mean SGOT (IU/L). To minutely analyse the changes in SGOT values, the assessment was done according to the normal range of 15-40 SGOT (IU/L) as suggested in the lab manual. The results are shown in table 4.

**Table No. 4**  
**Pre-Post Test Frequency Distribution of Male Patients with Cirrhosis of the Liver Based on Normal Range of SGOT**

SGOT (U/L)	Experimental Group		Control Group	
	Pre-test N(%)	Post-test N(%)	Pre-test N(%)	Post-test N(%)
Less than Normal: <15 U/L	-	01 (2%)	-	-
Normal (15-40 U/L)	-	34 (68%)	-	-
Above Normal >40 U/L	50 (100%)	15 (30%)	50 (100%)	50 (100%)
Total	50	100.0	50	100.0

In the pre-test assessment of SGOT in male cirrhosis patients in the experimental group all of them had SGOT values more than the specified ideal range of 15-40 IU/L. In the post-test assessment of SGOT in the experimental group 30% had their SGOT levels above the specified ideal range of 15-40 IU/L, 2% had less than normal SGOT while 68% has SGOT levels between the specified ideal range of 15-40

IU/L. It shows that the SGOT enzyme levels in the blood have come down in male cirrhosis patients belonging to the experimental group. In the pre-test assessment of SGOT in male cirrhosis patients of the control group, all of them had SGOT values more than the specified ideal range of 15-40 IU/L and remains the same even after the study period of three months.

**Table 5**
**Paired Comparison of SGPT of Male Patients with Cirrhosis of the Liver**

Groups	N	SGPT (IU/L)				Mean Difference	't'
		Pre Test		Post Test			
		Mean	S.D.	Mean	S.D.		
Experimental Group	50	361.20	127.40	42.18	103.59	319.01↓	19.34 (p<.01)
Control Group	50	331.57	121.95	468.46	124.22	136.89↑	12.60 (p<.01)

A perusal of table 5 revealed that the post-test mean SGPT (IU/L) of male cirrhosis patients of the experimental group was significantly decreased as compared to the pre-test mean SGPT (IU/L). The post-test mean SGPT (IU/L) of male cirrhosis patients of the control group was

significantly higher as compared to the pre-test mean SGPT (IU/L). To minutely analyse the changes in SGPT values, the assessment was done according to the normal range of 10-40 SGPT (U/L) as suggested in the lab manual. The results are shown in table 6.

**Table No. 6**
**Pre-Post Test Frequency Distribution Based on Normal Range of SGPT**

SGPT	Experimental Group		Control Group	
	Pre-test N(%)	Post-test N(%)	Pre-test N(%)	Post-test N(%)
Less than Normal: <10 IU/L	-	-	-	-
Normal : (10-40 IU/L)	-	41 (82%)	-	-
Above Normal : >40 U/L	50 (100%)	09 (18%)	50 (100%)	50 (100%)
Total	50	100.0	50	100.0

In the pre-test assessment of SGPT in male cirrhosis patients in the experimental group all of them had SGPT values more than the specified ideal range of 10-40 IU/L. In the post-test assessment of SGPT in the experimental group, 18% had their SGPT levels above the specified ideal range of 10-40 IU/L while 82% has SGPT levels between the specified ideal range of 10-40 IU/L. It shows that the SGPT

enzyme levels in the blood have come down in male cirrhosis patients belonging to the experimental group. In the pre-test assessment of SGPT in male cirrhosis patients of the control group, all of them had SGPT values more than the specified ideal range of 10-40 IU/L and remains the same even after the study period of three months.

**Table 7****Paired Comparison of Lifestyle Checklist Scores in Male Cirrhosis Patients**

Groups	N	Lifestyle Modification				Mean Difference	't'
		Pre Test		Post Test			
		Mean	S.D.	Mean	S.D.		
Experimental Group	50	52.20	5.17	67.40	5.01	↑15.20	63.58 (p<.01)
Control Group	50	51.06	5.69	50.00	5.64	1.06↓	0.83 (p>.05)

Table 7 reveals that the post-test mean score on the lifestyle checklist for male cirrhosis patients of the experimental group was significantly higher as compared to their pre-test mean scores. Table 7 also reveals that the post-test mean score on the lifestyle checklist for male cirrhosis patients of the control group was lower as compared to their pre-test mean scores but the result was statistically not proven.

**RESULTS :**

1. The weight status of male patients with cirrhosis of the liver showed significant signs of decreasing trend after three months of health-related behaviour counselling program.
2. The mean serum glutamic-oxaloacetic transaminase (SGOT) enzyme and the mean serum glutamic pyruvic transaminase (SGPT) enzyme showed substantial changes after three months of health-related behaviour counselling program with the majority of the subjects showing normal values on SGOT and SGPT profile test.
3. A positive effect of three months of health-related behavioural counselling was observed on the lifestyle choices of male cirrhosis patients.

**DISCUSSION :**

Results reveal that the counselling of 03 months was able to create awareness among liver cirrhosis patients regarding a healthy lifestyle for better treatment outcomes. This has resulted in an increased mean score for liver cirrhosis patients of the experimental group on the lifestyle checklist. This marked change in lifestyle of liver cirrhosis patients through counselling is also reflected in the decrease in their weight. In a cohort study conducted by Virtanen et al. (2021) it was found that the weight of the females with mean age of 48 years was reduced after one year of lifestyle counselling. Bhan (2020) advocated the need to control excess liver fat because it is the root cause of inflamed liver. Hence reducing even a little weight (5%) may be good for life because it lowers liver inflammation due to lifestyle changes such as limiting alcohol use, cutting off smoking, a healthy diet and regular physical activity. Ueno et al., 1997 in their study reported that short-term counselling based on nutrition and physical activity for three months is beneficial in liver enzyme levels of patients with non-fatty liver disease patients.

## CONCLUSION :

It may be concluded that lifestyle counselling gives a boost to better health-related behaviour through diet, physical exercise, and limiting consumption of alcohol and tobacco apart from other emotional and social issues that contribute towards weight management and thereby maintaining the recommended levels of SGOT and SGPT enzymes. Hence healthy lifestyle choice is an answer for the management of cirrhosis in male patients.

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