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SELF-MANAGEMENT STRATEGIES OF FATTY LIVER DISEASES AMONG DIAGNOSED PATIENTS IN TEACHING HOSPITALS IN OGUN STATE, NIGERIA

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Abstract

Fatty liver disease (FLD) is a growing public health concern often linked to metabolic disorders and lifestyle factors. Self-management strategies had been of great help for both management and preventive purposes. Thus, this study assessed the self-management strategies of FLD among diagnosed patients in selected teaching hospitals in Ogun State, Nigeria. A cross sectional descriptive design was utilized for the study using the total enumeration of 244 diagnosed patients. A structured and validated 23 items questionnaire was used, and data collection spanned for four (4) weeks using descriptive analysis. The findings showed that the knowledge level is moderate, perceived severity of fatty liver disease is high, self-management strategies was moderate, and the perceived barriers to the adoption of self-management strategies was high. The study concluded that knowledge, and severity of the disease condition. It is recommended that patient education and awareness be enhanced to foster better understanding and adherence to treatment.

Keywords: Fatty Liver Disease, Knowledge, Socio-demographic, Self-management Strategies.

INTRODUCTION

Fatty liver disease (FLD) especially the non-alcoholic fatty liver disease (NAFLD) has rapidly become a significant global health issues due to the rising prevalence of obesity, type 2diabetes, alcohol intake, high-fat or high-sugar diet, sedentary life and smoking (Paige, 2023). Fatty Liver disease or hepatic steatosis is a condition characterized by the excessive accumulation of fat (triglycerides) in liver cells surpassing 5% of the liver's weight on regular basis which could potentially cause inflammation or fibrosis and eventually cirrhosis (Younossi et al., 2020). This build up is usually with no symptoms until it becomes severe and hence impairing the liver function over time (Friedman et. al., 2021). It generally becomes apparent through routine medical check-ups or when symptoms occur and early diagnosis represents a central component of secondary prevention.

Fatty Liver Disease, especially NAFLD has become a global public health concern which affect approximately 25% of the global population, making it the most common chronic

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liver disease worldwide (Younossi et al., 2020). Meanwhile, Alcoholic liver disease is globally prevalent particularly in countries such as parts of Eastern Europe and Latin America with high levels of alcohol consumption (Singal et al., 2021). In Sub-Saharan Africa, the prevalence of fatty liver disease has historically been lower between 9% and 14% compared to more industrialized regions, though some studies have reported rates as high as 30% in urbanized settings. However, there are rising prevalence with urbanization, economic development and lifestyle changes (Davies et al., 2020; Mbaye et al., 2020). Although, there are limited data on the prevalence of FLD in Nigeria but studies from urban areas such as Lagos suggested a significant burden with approximately 16.2% of the general population with higher rates observed in individuals with obesity and diabetes (Olusanya et al., 2020). Olamoyegun et al., (2021) also reported that in Abuja, non-alcoholic fatty liver was discovered in 24.8% of adults undergoing health screenings indicating that the condition is becoming increasingly common and strongly linked to the rising rates of metabolic syndrome, obesity and type 2-diabetes commonly found among urbanized and affluent population.

Knowledge and awareness of fatty liver disease among diagnosed patients significantly influences adherence to lifestyle modifications which apparently leads to disease management. Awareness of the disease was notably low at 30.9% while on the other hand, 69% of diagnosed patients were unfamiliar with the condition meanwhile, awareness and understanding of the disease are very important for effective management and prevention of complications such as fibrosis, cirrhosis and cancer of the liver (Ajaz et. al., 2024). FLD is influenced by a variety of risk factors ranging from obesity especially visceral adiposity with 70% to 90% of individuals (Younossi et al., 2020), Insulin Resistance and Type 2 Diabetes about 40% to 70% (Marchesini et al., 2021; Younossi et al., 2021), Metabolic syndrome (Targher et al., 2020), Diet and nutrition (Vos & Lavine, 2021), Physical inactivity (Hallsworth et al., 2022), Excessive alcohol consumption (Singal et al., 2021), Genetics and Ethnicity (Browning et. al., 2021, Romeo et al., 2020). Age and Gender (Lonardo et al., 2020) and Gut Microbiota (dysbiosis, or imbalance in gut bacteria) Boursier et al., (2022).

Severity of fatty liver disease (FLD) among diagnosed patients varies widely, ranging from simple steatosis to more advanced stages such as non-alcoholic steatohepatitis, fibrosis, cirrhosis, and hepatocellular carcinoma. The progression is influenced by various factors including obesity, insulin resistance, genetic predisposition and co-morbidity. Advanced stages are associated with increased liver-related morbidity and mortality which made early detection and assessment of disease severity essential for effective management. Although, liver biopsy, imaging techniques and non-invasive biomarkers play a significant role in evaluating disease progression for prompt treatment strategies (Eslam et al., 2020; Sheka et al., 2020). Self-management strategies are very important component in the treatment and control of FLD as they empower patients to take active roles in managing their health condition. Effective self-management can prevent or stop disease progression, improve quality of life, reduce complications' risk and reduce burden on healthcare systems. It involves a combination of lifestyle modifications such as adopting

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a healthy diet, increasing physical activity and weight management (Chalasani et al., 2020). Nutritional interventions or dietary modification where patient adopt a low-calorie diet to reduce liver fat and overall body weight (Bellentani et al., 2020) is essential and balanced macronutrient Intake has been linked to reduce liver fat content thereby improving liver function (Yki-Järvinen, 2020). Physical activity such as regular exercise (Hashida et al., 2020), resistance training (Khalafi & Malandish, 2021), patient-centered counseling approach (West et al., 2020), stress management techniques (Van der Windt et al., 2020) and routine Check-Ups with regular monitoring of liver function tests (LFTs), lipid profile and glycemic control are essential for patients with FLD (Chalasani et al., 2020). Medication adherence for patients on prescribed drugs has a success rate of Vitamin E (43%), insulin sensitizers (34%), Obeticholic Acid (23%) while non-adherence can lead to the progression of FLD and the development of complications such as cirrhosis or hepatocellular carcinoma (Younossi et al., 2020).

Although, there is paucity of literature on how self-management support is integrated into clinical practice in teaching hospitals and also how diagnosed patients with FLD perceive, adopt and sustain self-management strategies especially in the context of developing countries. Hence, this study aims to contribute to the growing body of knowledge on FLD by identifying risk factors (knowledge, perceived severity, and, perceived barriers) associated with the disease and also highlight effective self-management strategies and gaps in patient education. Thus, this study identified the factors associated with fatty liver disease and self-management strategies among diagnosed patients in selected teaching hospitals in Ogun State, Nigeria.

Research Questions

1) What is the level of knowledge about fatty liver disease among diagnosed patients in selected teaching hospitals in Ogun State?
2) What is the perceived severity of fatty liver disease among diagnosed patients in selected teaching hospitals in Ogun State?
3) What are the perceived barriers to self-management strategies among diagnosed patients in selected teaching hospitals in Ogun State?
4) What are the self-management strategies among diagnosed patients in selected teaching hospitals in Ogun State?

METHODOLOGY

Research Design: A cross sectional descriptive research design was used. This research design was considered most suitable as the researcher cannot influence the independent variables as they were inherently unaltered. This design described the characteristics of the population and also helped in the understanding of various factors associated with fatty liver disease and self-management strategies among diagnosed patients in selected teaching hospital in Ogun State, Nigeria.

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Population: The target population was diagnosed patients with FLD at the two (2) teaching hospitals in Ogun State. These consisted of both in-patient (those on admission) and out-patients (those attending clinic) at the two (2) hospitals between June and December 2024. All patients (18 years and above) diagnosed and managed for liver disease between June to December, 2024 that were willing to partake in the study.

Sample Size and Sampling Technique: The total enumeration from the statistics was used since the population is small. Hence the sample size is 244. Purposive sampling technique was used to select respondents that met with the set criteria for the study.

Instrumentation: A self-structured questionnaire was constructed based on objectives, literature review and theoretical framework. The instrument was used with face to face question and answer interaction to clarify and respond to the questions that was raised before filling. It consisted of itemized questions related to the objectives of the study. The instrument was divided into six (6) sections.

Knowledge of fatty liver disease: It is a thirty-nine (39) item questionnaire. The higher the scores, the greater the knowledge level on FLD. The scores were classified into three: Low knowledge: scores between 0 and 13, Moderate knowledge: 14 and 26 while High knowledge: scores between 27 and 39.

Severity of fatty liver disease: This section elicited information on severity of fatty liver disease among diagnosed patients using 10 items in 5 points likert scale format. Categorization on severity of fatty liver disease among diagnosed patients was classified into three; Mild: scores between 10 and 25, Moderate: scores between 26 and 40and Severe: scores between 41 and 60.

Factors associated with FLD: This session elicited information on factor associated with fatty liver disease among diagnosed patients using 10 items in 5 points likert scale format

Self-management strategies: This section elicited information on self-management strategies among diagnosed patients using 12 items in 5 points likert scale format

Perceived barriers to self-management strategies: This section elicited information on perceived barriers to self-management strategies among diagnosed patients using 10 items in 5 points likert scale format.

Method of Data Collection: An introductory letter was collected from Babcock University post graduate school to the two (2) teaching hospitals in order to gain permission to conduct the study. The researcher trained two (2) research assistants (Igbo and Hausa speaking) that assisted in carrying out the study. The instrument was administered by the researcher and assistant within the period of 4 weeks. The questionnaire was self-administered by those that were educated. For those that needed assistance, clarification on any part of the questionnaire was made with detailed explanation from the researcher. The research assistants translated to non-English speaking patients and also gave them the opportunity to ask question, participants were allowed to provide their answers while the research assistant documented on the questionnaire. Questions on the instrument

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were answered by the respondent within an estimated period of ten (10) to ten (15) minutes. All copies were collected on the spot to prevent low return rate of the questionnaire.

Method of Data Analysis: The filled questionnaire were collected, coded and analyzed using descriptive statistics (frequency counts, percentages, tables, mean and standard deviation) while inferential statistics (Chi-square and multiple regression analysis) was employed to analyze the hypotheses generated.

RESULTS

Table 1: Level of Knowledge of respondents about FLD among diagnosed patients

Level of Knowledge	Frequency (N)	Percentage (%)
Low	3	1.2
Moderate	199	81.6
High	42	17.2

From the table 1, the knowledge level is categorized into low, moderate and high. Majority of the respondents had a moderate 199 (81.6%) level of knowledge on what FLD is all about. This made their knowledge on the disease condition and self-management strategies to vary. It may also be likely due to their exposure and level of education as majority had secondary education.

Table 2: Perceived severity of fatty liver disease among diagnosed patients

Severity of FLD	SA F (%)	A F (%)	D F (%)	SD F (%)	NI F (%)	Mean (X)	SD
FLD lead to liver damage	129 (52.9)	81 (33.2)	17 (7.0)	5 (2.0)	12 (4.9)	4.32	0.98
Patient may require liver transplant	30 (16.0)	63 (25.8)	115 (47.1)	24 (9.8)	12 (4.9)	3.31	0.98
FLD increases the risk of heart attack and stroke	39 (16.0)	58 (12.7)	98 (40.2)	26 (10.7)	23 (9.4)	3.26	1.14
Obesity and type-2 diabetes increases the risk of heart attack and stroke	120 (49.2)	82 (33.1)	16 (6.6)	-	26 (10.7)	4.11	1.23
High consumption of saturated fat and refined sugar diet causes FLD	84 (34.4)	98 (40.2)	47 (19.3)	3 (1.2)	12 (4.9)	3.98	1.02
Drugs like cortisol and estrogen induces FLD	48 (19.7)	92 (37.7)	5 (2.0)	46 (18.9)	53 (21.7)	3.30	1.49
Sedentary lifestyle contribute to FLD	39 (16.0)	89 (36.5)	56 (23.4)	27 (11.1)	33 (13.5)	3.30	1.25
Hormonal changes at menopause causes FLD	130 (53.3)	16 (6.6)	43 (17.6)	21 (8.6)	34 (13.9)	3.77	1.50
Alcohol intake increases the risk of FLD	54 (22.1)	93 (38.1)	58 (23.8)	12 (4.9)	27 (11.1)	3.55	1.21
Average mean score = 3.66, Std. Deviation = 1.13							

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The table 2 above presented diverse information's on perceived severity of fatty liver disease among diagnosed patients. Using the decision rule, all the above listed are information regarding severity of fatty liver disease with an average mean score of 3.61± 1.03. When this average mean score of 3.66± 1.03 is translated into percentage of 73.2%, it could be said that the perceived severity of fatty liver disease among diagnosed patients in selected teaching hospitals in Ogun State is about 72.2%. Specifically, the patients had a mean score of 4.32±0.98 on FLD leading to liver damage; 3.31±0.98 on patient requirement for liver transplanting, and, 3.26±1.14 on the risk of heart attack and stroke. It was further observed from the table that obesity and type-2 diabetes had a mean score of 4.11 (82.2%) on a scale of 5 (100%), while consumption of high saturated fat and refined sugar diet has a mean score of 3.98± 1.02 (79.6%). Other factors are; hormonal changes at menopause (mean = 3.77± 1.50, 75.4%), alcohol intake increases the risk of FLD (mean = 3.55± 1.21, 71%), drugs like cortisol and estrogen induces and sedentary lifestyle contribute to FLD (mean = 3.30± 1.49, 66%).

Table 3: Self-management strategies among diagnosed patients

Self-management strategies	SA F (%)	A F (%)	D F (%)	SD F (%)	NI F (%)	Mean (X)	SD
Dietary counseling	147 (60.3)	94 (38.5)	3 (1.2)	-	-	4.59	0.52
Regular physical activity	57 (23.4)	112 (45.9)	55 (22.5)	8 (3.3)	12 (4.9)	3.80	1.00
Stress reduction practice	47 (19.3)	42 (17.2)	77 (31.6)	51 (20.9)	27 (11.1)	3.13	1.26
Medication adherence & avoidance of OTC	6 (2.5)	131 (53.7)	38 (15.6)	5 (2.0)	64 (26.2)	3.04	1.31
Quality sleep (7-8 hours)	61 (25.0)	74 (30.3)	80 (32.8)	27 (11.1)	2 (0.8)	3.61	0.94
Avoiding alcohol consumption reduce fat	31 (12.7)	109 (44.7)	36 (14.8)	52 (21.3)	16 (6.6)	3.36	1.14
Routine Medical Check-up aid treatment	42 (17.2)	94 (38.5)	49 (20.1)	25 (10.2)	34 (13.9)	3.35	1.27
Gradual weight loss reduces liver fats	38 (15.6)	82 (33.6)	53 (21.7)	24 (9.8)	47 (19.3)	3.16	1.35
Monitoring and managing co-morbidities	32 (13.1)	80 (32.8)	83 (34.0)	-	49 (20.1)	3.19	1.28
Strong support system encourages adoption	98 (40.2)	76 (31.1)	48 (19.7)	17 (7.0)	5 (2.0)	4.00	1.03
Prompt education aids adoption practices	71 (29.1)	60 (24.6)	42 (17.2)	14 (5.7)	57 (23.4)	3.30	1.52
Financial constraint hinders adoption	60 (24.6)	62 (25.4)	67 (27.5)	17 (7.0)	38 (15.6)	3.36	1.34
Average mean score = 3.49, Std. dev. = 1.16							

The Table 3 presented information on self-management strategies among diagnosed patients. Using the decision rule, all the above listed were information regarding self-management strategies with an average mean score of 3.49±1.16 while the other

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individual strategies scores are; following dietary counseling improves health with the mean score of 4.59, strong support system encourages adoption (mean score of 4.00), regular physical activity (mean score of 3.80) reduces fat, quality sleep of at least 7-8 hours improve liver disease (mean score of 3.61), financial constraint hinders adoption and avoiding alcohol consumption reduce fat both are with a mean score of 3.36. Routine medical check-up aid treatment (mean score of 3.35), prompt education aids adoption practices (mean score of 3.30), monitoring and managing co-morbidities (mean score of 3.19), gradual weight loss reduces liver fats (mean score of 3.16), stress reduction practice (mean score of 3.13) and medication adherence and avoidance of OTC (mean score of 3.04). This result revealed how knowledgeable the participants are to the various self-management strategies which may likely be due to their exposure as majority had about the disease condition from the healthcare worker.

Table 4: Perceived barriers to self-management strategies among diagnosed patients

Factors associated with fatty liver disease	SA F (%)	A F (%)	D F (%)	SD F (%)	NI F (%)	Mean (X)	SD
Lack of awareness	130 (53.3)	21 (8.6)	43 (17.6)	16 (6.6)	34 (13.9)	4.07	1.01
Inaccurate information	120 (49.2)	82 (33.1)	16 (6.6)	-	26 (10.7)	4.11	1.23
Stress, anxiety and depression	39 (16.0)	89 (36.5)	56 (23.4)	27 (11.1)	33 (13.5)	3.30	1.25
Food Scarcity and shortage	130 (53.3)	43 (17.6)	34 (13.9)	21 (8.6)	16 (6.6)	4.35	0.81
Lack of motivation & support	129 (52.9)	81 (33.2)	17 (7.0)	5 (2.0)	12 (4.9)	4.32	0.98
Social events	147 (60.3)	94 (38.5)	3 (1.2)	-	-	4.59	0.60
Financial limitation	98 (40.2)	76 (31.1)	48 (19.7)	17 (7.0)	5 (2.0)	4.00	1.03
Cultural norms, taboo and belief	6 (2.5)	38 (15.6)	5 (2.0)	64 (26.2)	131 (53.7)	2.28	1.77
Access to healthcare	42 (17.2)	94 (38.5)	49 (20.1)	25 (10.2)	34 (13.9)	3.35	1.27
Rural dwellers & limited access	23 (9.4)	39 (16.0)	26 (10.7)	58 (12.7)	98 (40.2)	2.36	1.89
Average mean score = 3.60, Std. dev. = 1.07							

The table 4 presented the various perceived barriers to the adoption of self-management strategies among diagnosed patients. Using the decision rule, all the above listed were information regarding barriers to the adoption of self-management strategies with an average mean score of 3.60±1.07. When this average mean score of 3.60±1.07 is translated into percentage of 72%, it could be said that the perceived barriers to the adoption of self-management strategies among diagnosed patients in selected teaching hospitals in Ogun State is about 72%.

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It should be noted that all the above listed factors except for Cultural norms, taboo and belief (2.28±1.77), and, rural dwellers and limited access to care (2.36±1.89) were found to have a mean score less than average, which could be regarded as less or no barriers to the adoption of self-management strategies. However, in order of ranking, the diagnosed patients perceived the following as major barriers to their adoption of self-management strategies: Social events (4.59±0.60), food scarcity and shortage (4.35±0.81), Lack of motivation and support (4.32±0.98), inaccurate information (4.11±1.23), lack of awareness (4.07±1.01), financial limitation (4.00±1.03), access to healthcare (3.35±1.27), and stress, anxiety and depression (3.30±1.25). It is deduced that when an individual is well informed about his or her health condition, it's much easier to engage in self-management strategies to improve such condition. Hence awareness creation, adequate and proper health information and education can improve the health of the populace.

DISCUSSION OF FINDINGS

The knowledge level of the respondents on the meaning, stages of disease progression, causes, risk factors, symptoms and risk of complications of fatty liver disease and self-management strategies is moderate. This is contrary to the opinion of Blais et al. (2021) who found out from their study that many diagnosed patients lack essential knowledge about the disease condition, particularly the NAFLD due to its asymptomatic nature in the early stages. This apparently made patients not to seek treatment or lifestyle changes until the disease advances to a more severe form such as non-alcoholic steatohepatitis (NASH), fibrosis, or cirrhosis. According to Marchesini et al., (2021), diagnosed patients were discovered to generally possess minimal knowledge regarding the lifestyle changes (dietary changes and regular physical activity) that could halt or reverse FLD progression. However, lack of awareness among patients can hinder effective disease management. This was also revealed in a study by Lazarus et al. (2020) where only 25% of patients were aware that 5% to 10% of weight loss can significantly improve liver health. Similarly, many patients are unfamiliar with the role medications (pioglitazone and vitamin E) play in the management of specific cases of NAFLD (Chalasani et al., 2020).

The perceived severity of FLD of the diagnosed patients was moderate. The respondents were aware that fatty liver disease can lead to liver damage, bleeding from the mouth & stomach and that patient may require liver transplant. The respondent also believed that adequate knowledge of the disease can prevent severity of complication while they agreed that severity of the disease influence self-management strategies. Although, some were of the opinion that FLD is not as serious as other Organ disease. This is supported by the study of Younossi et al., (2020) which revealed that up to 20–30% of fatty liver disease patients may progress to a more severe form known as non-alcoholic steatohepatitis (NASH) with inflammation and liver cell damage.

The following are self-management strategies identified by the patients; Dietary counseling, Strong support system, Regular physical activity, Quality sleep, Avoidance of

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alcohol consumption, Routine Medical Check-up, Monitoring and managing co-morbidities, Gradual weight loss, Stress reduction practice, Medication adherence and avoidance of OTC. This is supported by the report of Buzzetti et al., (2021) studies which revealed that diet rich in vegetables, fruits, whole grains, lean proteins and healthy fats (such as the Mediterranean diet) is effective in reducing liver fat and improving metabolic health So also, avoidance of refined sugars particularly fructose common in sugary drinks is essential because of its relationship with fat accumulation in the liver. Also supporting is that the perceived benefits of self-management strategies such as lifestyle modifications with special focus on diet and physical activity have been reported to reduce liver fat, inflammation and fibrosis among diagnosed patients (Zelber-Sagi et al., 2020). Hence, by adopting a balanced diet rich in fiber and low in sugars and saturated fats, patients can decrease hepatic fat accumulation, improving liver function and overall health (Katsagoni et al., 2022).

The patients identified the following barriers to self-management strategies and they are; Lack of awareness about FLD, Lack of motivation and social support, Financial limitation, limited access to care, Food Scarcity and shortage and influence of social events, Stress, anxiety and depression, Cultural norms, taboo and belief, waiting time and Inaccurate information and education. This finding is corroborated by Buchan et al., (2022) who reported that the absence of clear, accessible information about FLD can lead to confusion and inaction among patients. Stating further, they said lack of awareness about the disease condition and the importance of self-management strategies has been a major barrier for many patients because it becomes difficult for them to make informed decisions and prioritize long-term self-care. Some patients who do not fully understand how lifestyle strategies such as diet and exercise will impact their liver health or disease progression often do not adopt the necessary lifestyle changes (Kirkegaard et al., 2022).

CONCLUSION

The study concluded that knowledge of the participants, severity of the disease condition and factors associated with FLD has a great influence on self-management strategies among diagnosed patient in the selected tertiary hospitals in Ogun State. Hence, the study recommended that patient education and awareness are essential for effective self-management with emphasis on the need for a tailored intervention that addresses individual risk factors. Also, support from the healthcare professionals, family members and the community enhances adherence and adoption of treatment plans which invariably improves overall quality of life.

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