
ASSESSMENT OF KNOWLEDGE AND PRACTICE OF PATIENT UNDERGOING LIVER TRANSPLANTATION SURGERY

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Abstract:

Background: Liver transplantation is now considered as the gold standard for treatment of patients with end-stage liver diseases and early liver tumors in cirrhotic livers. The recognition and prevention of medical as well as surgical complications after liver transplant is the key to improve long term outcomes. The patient awareness about preparation to liver transplantation and their healthy practices is very low. It is important for patients to understand the basic process involved with liver transplants. **Aim:** recommended health education booklet for patient undergoing liver transplantation surgery. **Method:** Research design: descriptive study, subject: on (105) patients undergoing liver transplantation, setting :at patients home through home visits. Tools: Elgilani socioeconomic scale, health profile sheet, patients knowledge structured interview questionnaire and evaluation questionnaire of the health education booklet. **Results:** (31.4%) of hepatic patients were illiterate, (60%) of them belonged to the middle socio economic level, (80%) to (100%) of patients showed poor score level of knowledge in relation feature and function of the liver, as well as definition, causes and indication of liver transplantation, signs of complication, number of meals that patient should had after disease and types of food that improve patient appetite, immunity and that replacement liver cells as well as physical activities and skin hygiene, criteria of the recipient and donor as well as preparation steps for transplantation, examination before operation, steps of admission process and preoperative medication. Also patients had poor coping with disease appear in didn't follow dietary style and (50.5%) of them stopped medications when felt better. **Conclusion:** The main conclusion drawn from the current study is that the majority of hepatic patients had poor score level of knowledge regarding liver transplantation and, poor coping with disease. **Recommendation:** application of health education booklet for patients undergoing liver transplantation surgery

Key Words: Liver transplantation- preparation- Knowledge – Practice.

Introduction

Liver transplantation (LT) has become the gold standard for the management of the complications of cirrhosis, liver failure, certain types of cancer, and metabolic derangements (1), it has been rapidly developed from a highly experimental and controversial procedure to one of the most successful stories in medicine. The rates of success and survival have

increased from 30% in the1970s to almost 80% (2)

Liver transplantation is a surgery to remove diseased or injured liver and replace it with healthy whole liver or segment of liver from another person called donor. (3)

but it may not be possible in certain patients depending upon the medical or psychosocial comorbidities . (1)

Liver transplantation viewed as the treatment of choice for selected patients with hepatocellular carcinoma who which lesion 2 cm or larger and less than 5 cm, or no more than three lesions, the largest of which is less than 3 cm, and no radiographic evidence of extrahepatic disease. Liver transplantation is also the only effective option for patients with fulminant hepatic failure resulting from Wilson disease which an autosomal recessive disorder of copper excretion that can result in either acute or chronic hepatitis with liver failure. (4)

The recipients are at significant risk for the development of neurological complications, such as altered mental status and seizures in the postoperative period. Identifying accurate predictors of these events may allow optimal selection and preparation of patient minimize risk after transplantation.

(5) The recognition, management, and prevention of medical as well as surgical complications and comorbidities after liver transplant is the key to improve long term outcomes because, the incidence of complications tends to be high after liver transplants, especially in patients who were severely debilitated pre-transplant.

(2) A health literate person can think things through and make health choices in solving his/her own problems as well as family

member problems, be responsible and makes health choices that benefit him/herself and family members, be in charge of his/her own health learning and teaches family members to do the same and also can use communication skills to express needs, questions and concerns to health care providers and staff. (10) Therefore, it is important for liver transplant patients and their families to understand the basic process involved with liver transplants, to appreciate some of the challenges and complications that face liver transplant recipients, and to recognize symptoms that should alert recipients to seek medical help. (2)

Aim of the study

The aim of the study is to design health education booklet for patient undergoing liver transplantation surgery.

Research questions

- 1-What are the patients' knowledge and healthy practices related to preparation for liver transplantation surgery?
- 2-What are the perspectives of patients undergoing liver transplantation surgery about designed health education booklet?
- 3-How do health educators and experts in related fields found the designed health education booklet?

Subjects and Methods

Subjects

1. Research design

descriptive study design was used to carry out this research.

2. Setting

The study was conducted at patients' homes through home visits.

3. Subjects and sampling

Subjects

1. The study included patients who under-going liver transplantation Professionals in the fields of hepatology and health education at Mansoura University.

Sampling and sample size

1. Patients under-going liver transplantation

Systemic random sample used as a sampling technique. Sampling size of 105 patients was calculated to explore patients' knowledge in relation to pre- liver transplantation management and their lifestyle the $\alpha=0.01$, while, the $\beta=0.05$ expected prevalence of correct knowledge and efficient

lifestyle =70% and null hypothesis is 50%

2. Professionals

All health educator professionals and hepatology experts at Mansoura university who accepted to participate in evaluating the designed health education booklet were included (Number of

professionals estimated by 15 experts).

Study tools

After reviewing the relevant literature, four tools were used in this study for data collection. Tool 2, 3 and 4 were developed by the researcher except the part of Socio-Economic Scale in the first tool was adopted as the following: **Tool I: El-gilani socio-economic scale**

This scale was used to investigate socio-demographic characteristic of the patients this tool include seven domains (education and cultural, occupation, family possessions, family, home sanitation, economic and health care domains). more than 64+ points were high socio-economic level. 43-63 points middle 22-42 points were at low level

Tool 2: Health profile sheet

It was interview sheet used to asses patients' health history.

This tool was classified into two categories as the following:

a- Health history

b- Physical assessment

Tool 3: Patients knowledge structured interview questionnaire:

This tool used to asses patients' knowledge 22 questions one mark for each one

Tool 4: Evaluation questionnaire of health education booklet of patient undergoing liver transplantation

Health education booklet was designed by the researcher

including the following contents: nutrition, medication, exercise, etc. which required for patient undergoing liver transplantation.

The booklet evaluation tool was used to test the internal validity of the health education booklet as

1. Checklist questionnaire for assessing the health education booklet by participants of patients 33 questions scale - ranged from 0 to 2 degrees

2. Checklist questionnaire for assessing the health education booklet by hepatology experts and health educator professionals 50 questions scale ranged from 0 to 2 degrees

Methods

This study was accomplished through two main phases:

Phase 1: Preparatory phase:

Preparatory process

It included reviewing of current and past, local and international related literature, and the theoretical knowledge of various aspects of the study using books, articles, internet periodicals and magazines and internet in order to develop the data collection tools.

Administrative process

An official letter was issued from the Faculty of Nursing to the manager of Gastrointestinal Tract Hospital affiliated from Mansoura University to obtain approval to conduct the study. The researcher reviewed the record belonged to

patients' list till complete the required sample size.

patients under-going liver transplantation from Gastrointestinal Tract Hospital affiliated from Mansoura University to obtain their connection numbers.

3. Developing of the study tools

All tools (2, 3 & 4), were developed by the researcher after reviewing the related literature except the part of Socio-Economic Scale in the first tool was adopted.

- The juries involved five experts in the field of community health nursing to test content validity.

4. Pilot study

A Pilot study was carried on 10% of study sample, who were excluded from the main study sample selected randomly to evaluate the clarity, applicability and reliability of the research tools.

Phase II: Operational phase

Stage 1: Initial data collection

- The researcher systemic randomly select the odd number from the patients' list

the designed educational strateg

This questionnaire was used to explore professionals opinions in community health nursing and patients' list till complete the required sample size.

- The researcher called the selected patients to obtain

their approval for visiting their homes.

- The researcher started by introducing herself to the patients. The research purpose was explained to patients during the first contact to gain their cooperation.
- The researcher visited patients at their homes during first six months (from the beginning of August till the end of January) twice/week
- Assessing the patients' knowledge and practice.

Stage 2: Data analysis

- Data were sorted, coded into especially designed formats.
- Data were analyzed using SPSS
- Data were presented using descriptive statistics

Stage 3: Designing health education booklet

According to the preliminary data assessment of patients' knowledge and practice from first stage was considered in designing of the health education booklet.

The health education booklet was designed by reviewing literatures to include information that was required to adequately prepare patients undergoing liver transplantation. This booklet would inform those patients about the following:

- Stated process and regulations at of the Hospital for a successful liver transplantation surgery.
- All health practices that to maintain the recipient lath condition
- All inquiries that were raised by during the initial assessment.

Stage 4: Evaluation of health education booklet

The health education booklet was circulated to the group of hepatology experts and health educator:

- They evaluated the validity of the booklet using a checklist sheet.

Any specific instructions and comments from evaluation stage were documented and considered in the formulation of the final booklet

Ethical Consideration

- An approval was obtained from Research Ethical Committee-Faculty of Nursing before conducting this study.
- Patients were informed about the purpose of the study and assured that their identities and responses to the interview would be confidential, answering was voluntary and participation (or not) wouldn't affect on their current or future health care.

Informed consent was obtained from patients to participate in the study.

Results:

Results of this study were divided into four parts: **Part 1: socio-demographic characteristic and health assessment of hepatic patients.** **Part 2: Utilization of the health care service, life style and coping action with disease manifestations**

Part 3: Situational was concerned with hepatic patients knowledge about liver, liver transplantation, healthy practice and regulation of hospital before operation

Part 4: Description of the evaluation of the designed health education booklet about patients undergoing liver transplantation surgery.

1. Part 1: socio-demographic characteristics and health assessment of hepatic patients:

Table (1) shows that almost one third (31.4%) of the studied sample was illiterate, and the majority (81%) of the hepatic patients were resident of urban areas. As regard to economic status more than half (60%) of the hepatic patients belonged to the middle level class.

Table (2) illustrates that 59% of hepatic patients discovered the disease since less than 10 years. The disease was discovered mainly through the appearance of sign and symptoms of abdominal pain among 60% of hepatic patients, while jaundice and loss of appetite,

occurred for (44.87%) and (34.3%) of the hepatic patients respectively **Table (6)**

illustrates the mean of food serving that patients intake per day after occurrence of the disease, which showed poor dietary habit. The means of protein serving/ day was 2.10 ± 1.35 , and 5.56 ± 3.16 serving of carbohydrates. However the daily serving of vegetables and fruits were $1.08 \pm .28$ and $1.62 \pm .73$ respectively.

Part 3: Situational was concerned with hepatic patients knowledge about liver, liver transplantation, healthy practice and regulation of hospital before operation :Table (7) reveals that most of hepatic patients showed a poor level of knowledge about the all issues related to liver function, causes of liver disease as medication.

Part 4: Description of the evaluation of the designed health education booklet about patients undergoing liver transplantation surgery. **Table (8)** showed that (93.3%) of the experts stated that the topic of the booklet is important, the target group is determined, vocabulary is composed of simple words importance of the booklet respectively

Discussion:

Liver transplantation (LT) represents the only chance of cure and long-term survival as a

treatment of irreversible liver diseases. Patient with such liver diseases suffer from a chronic condition, which by itself entails risks and health problems. Liver transplantation in less than 30 years has been rapidly developed, and rates of success have increased from 30% in the 1970s to almost 80% (2) (6).

Norwegian law of Specialist Health Care Service states that a lack of patient education is comparable to a lack of necessary medication. Therefore, patients must receive education in order to cope with chronic illness and avoid the progress of illness (7).

Research showed that persons with limited education and literacy skills information, and less knowledge about available health care services than adults do with higher literacy and education levels. The problem of poor health literacy is more serious than most people realize. (9) World Health Organization defines health literacy as "the ability of individuals to access and use health information to make appropriate health decisions and maintain basic health". Health literate persons can think through and will be more responsible in making health choices for solving their own health problems(10). The results of the current study showed that one third of the hepatic patients were illiterate. This was in

agreement with the study conducted on hepatic patients in Egypt reported by (14), who found that more than one fourth of the hepatic patients were illiterate. This study found that low literacy level play an important factor that negatively affected the lifestyle of hepatic patients. This was in the same line with the study conducted on 60 hepatic patients who had received LT in China conducted by (13). They found that low literacy is an important factor relating to the poor health related quality of life in LT patients. Conducting behavioral improvement interventions would improve quality of life, because of the literacy level is the first line reflected on the increasing the level of health awareness. These findings come in agreement with similar study conducted on transplant recipient in US (15).

Regarding the **health history of the hepatic patients**, the finding of the present study revealed that more than half of the hepatic patients suffered from disease since less than ten years. They discovered it from the certain manifestations namely; abdominal pain, loss of appetite and jaundice. This finding is in the same line with (11), who found that the most of the subjects were discovered their disease by abdominal pain, and more than half of the subjects discovered it by loss of appetite. Disease mostly discovered from

prodromal manifestations, as the concept of periodic check up almost neglected in our Egyptian culture. To accomplish the development of health education booklet, it was important to explore patients' knowledge and practice regarding to their health condition. The present study found that less than half of hepatic patients ignore the importance of it follow dietary regimen. This is in the same line with (14), who revealed that, the majority of studied sample, had unsatisfied knowledge score about nutrition of the disease. This could be due to lack of health education that led to ignorance of the importance of dietary style for patients undergoing liver transplantation. This health education booklet aimed at providing patients with information that enable them to cope with their health condition, improving their adherence to treatment plan and reduce any potential complications. This point of view of the present study was in agreement with several studies conducted in different countries. One of these studies that conducted on 150 outpatients in a General Hepatology Clinic at a liver transplant referral center in USA, concluded that providing a concise health education booklet was associated with 26% improvement in patient knowledge (12)

Patients and professional experts participated in evaluating this health education booklet. When participants are actively involved in their learning there is greater learning and facilitators need feedback on whether they are meeting their needs This was in agreement the study conducted in South, New York on 15 recipients; patient-oriented educational brochures were under the tutorial of an expert counselor(8).

The evaluation of the designed health education booklet revealed that all patients agreed that about the good quality of printing with attractive colors and clear headings. They mentioned sequential of the entire topic and using of pictures make the message clear and understandable. The present study revealed that all experts showed that language of the booklet was conversational, written in an active voice and material was friendly to reader. In addition, most of them mentioned that the heading and subheadings are identified to assist the learning process

Conclusion

The main conclusion drawn from the present study was that, concerning hepatic patients' lifestyle less than three fourths of hepatic patients had improper dietary style, almost half of them stopped medications when felt better and minority of the patients

exercising. The majority of hepatic patients had poor knowledge related to liver disease and preparation for liver transplantation surgery. Majority of experts and all patients mentioned that the designed health education booklet for patients undergoing liver transplantation surgery is a good health education method to increase patients awareness about liver disease and help them to adapting lifestyle

Table (1): Distribution of hepatic patients according to their socio-demographic characteristics

Item	N=105	%
Gender		
Male	72	68.6
Female	33	31.4
Level of education		
Illiterate	33	31.4
Read, write and Preparatory	25	23.8
Secondary, Intermediate and Technical	31	29.6
University graduate	16	15.2
Occupation	40	38.1
Didn't-work/house wife	10	9.5
Unskilled manual worker	14	13.3
Skilled manual worker/Farmer	18	17
Trades/Business	15	14.3
Professional	22	21
Residence		
Urban	85	81
Rural	20	19
Economic Status	40	38.1
Low	63	60
Middle	2	1.9
High		

Table (2): Distribution of hepatic patients according to their health condition

Items	N=105	%
Onset of discovering the disease	62	59
less than 10 years	33	31.4
10-15 years	2	1.9
more than 15 years		
Signs and symptoms of the disease	63	60
Abdominal pain	47	44.8
Jaundice	36	34.3
Loss of appetite	17	16.2
Fatigue	15	14.3
Other *		
Co-morbid disease		
Diabetes	16	15.2
Hypertension	3	2.9
Recurrence of hepatic coma during last month	17	16.2
Once /month	15	14.3
Twice /month		

Table (3): Distribution of hepatic patients according to their received medication

Items	N=105	%
Types of medications received		
Plasma	18	17.1
Livagol	104	99
Celmarin	75	71.4
Lasix	96	92.4
Adherence to medications	41	39
Cause of didn't adhered to medications		
Stopped them when felt better	53	50.5
Other (Fear from side effects of medications, ignore the importance of adherence to the medications or it is not improvement)	11	10

Table (4): Distribution of hepatic patients according to their utilization of health care services

Items	N=105	%
Health care services		
Private health care facilities	90	85.7
Health insurance/ Free governmental health care services	9	8.6
Schedule of follow up		
Monthly	36	34.3
Twice per week	66	62.9
Aim of follow up		
Investigations	105	100
Medications charge	44	41.9

Table (5): Distribution of hepatic patients according to their dietary habit

Item	N=105	%
Dietary regimen		
Boiled food	32	30.5
Salty food	2	1.9
Decreased intake amount of meat	104	99
Decreased intake amount of fat	30	28.6
Avoid soft drinks (Tea/Coffee)	13	12.3
Causes of noncompliance to dietary regimen		
Like food	1	1
Ignorance of the importance of dietary regimen	47	44.8
Number of meals per day		
One	11	10.6
Two	69	65.7
Three or more	25	22.9

Table (6): Means of food serving that patients intake/ day after the disease occurrence

Serving of food elements	Mean± SD
Protein	2.10±1.35
Vegetables	1.08± 0.28
Carbohydrates	5.56±3.16
Dairy products	1.62±.73
Fruits	1± 0.00
Salt in diet	0.80±.39
Sweets	1.71± 0.58

Table (7): Distribution of hepatic patients according to their knowledge about liver and liver transplantation

Item	N=105	%
Feature of liver	103	98.1
Poor	2	1.9
Fair		
Function of liver	99	94.3
Poor	6	5.7
Fair		
Signs and Symptoms of liver diseases	99	94.3
Poor	6	5.7
Fair		
Definition of liver transplantation	105	100
Poor		
Causes of transplantation	13	12.4
poor	91	86.6
Fair	1	1
Good		
Indications of liver transplantation	4	3.9
Good	101	97.1
Poor		

Table(8) Distribution of experts according to their evaluation to the printed materials of the designed health education booklet about patients undergoing liver transplantation surgery

Item	N= (15)	%
Topic		
The topic of the education booklet is important	14	93.3
The topic of the education booklet is significant	10	66.7
Author and target group		
Names of the developers of the booklet are mentioned.	15	100
The target group is determined.	14	93.3
Item	N= (15)	%
Objectives and contents		
The objectives are specific	14	93.3
The objectives are measurable	8	53.3
The objectives are achievable	7	46.6
The objectives are reliable	12	80
The objectives are time bound	12	80
Content is sufficient to achieve the objectives.	13	86.7
Content is understandable	10	66.7
Content is updated	10	66.7
Important points are stated	13	86.7
Content is matched to the native culture	11	73.3
Information is adapted to the native culture	8	53.3
Content is concise	11	73.3
Content is relevant to the objectives	11	73.3
Content is written in a patient-oriented style	8	53.3
Literary Presentation		
Language is neutral (no comparative adjectives, promotion or false appeals)	9	60
Language is explanatory	12	80
Language is conversational	15	100
Language is written in the active voice	15	100
Majority of the vocabulary is composed of popular words	13	86.7
Headings are identified	12	80
subheadings are identified	12	80
Vocabulary is composed of simple words	14	93.3

Language is suitable for readers	12	80
Planning and sequence of information are consistent	11	73.3
Planning and sequence of information are making it easier for the readers to predict its flow.	12	80
Material is friendly to reader	15	100
Illustrations		
Illustrations are simple	14	93.3
Illustrations are appropriate	11	73.3
Illustrations are present an easily understandable outline	14	93.3
Illustrations are related to the text (express the desired purpose).	12	80
Illustrations are integrated with the text (easily located).	10	66.7
Legibility and printing characteristics		
Item	N=(15)	%
Size of the letters is suitable	9	60
Style of the letters is appropriate	11	73.3
The space between lines is suitable.	11	73.3
Length of the paragraphs is proper	12	80
Use of bold characters	9	60
Bullet points draw attention to specific points or key content	13	86.7
Subjective use of blank space reduces overcrowded appearance	12	80
Contrast between the printed content and the paper.	12	80

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