

Knowledge, Practice and Satisfaction of Clients with Hepatitis C Virus Regarding Sovaldi Therapy

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Abstract

Background: The introduction of sovaldi combination therapy marked the beginning of a new era in HCV treatment in Egypt, which is highly-effective with cure rate over 90% as a part of MOHP efforts to eliminate the morbidity and mortality resulting from its prognosis and to control the viral hepatitis epidemic. **Aim of the study:** was to assess knowledge, practice and satisfaction of clients with hepatitis C virus regarding sovaldi therapy. **Design:** descriptive research design was utilized to carry out this study. **Setting:** The present study was conducted at the liver center in Banha City. **Sample:** purposive sample including 290 clients with hepatitis C virus at the liver center in Banha City. **Tools:** an interviewing questionnaire was used, it divided into four main parts: **Part 1:** Socio-demographic characteristics and medical data, **Part 2:** client knowledge regarding sovaldi therapy, **Part 3:** client practices regarding sovaldi therapy, **Part 4:** client satisfaction regarding the provided care. **Results:** this study indicated that, mean age for study subjects was 35.23±11.58, 67.6% of them were male, 71.3% of the study subjects had unsatisfactory level of knowledge regarding HCV and sovaldi combination therapy, 31.4% of the study subjects had satisfactory practices regarding sovaldi combination therapy; 69.7% were unsatisfied from the quality of care provided. **Conclusion:** there are significant association between the clients total knowledge score and educational qualification, occupation and income, there was a highly statistical significance association between total practice score and their educational qualification and their age, there are highly statistical significance association between total satisfaction score and their income. **Recommendation:** Based on this finding, the investigator recommended to carry out health education sessions to the clients receiving sovaldi therapy regarding: their practices toward sovaldi administration, proper nutrition, the restricted medication during treatment and about the possibility of re infection.

Keywords: Knowledge, practices, satisfaction, hepatitis C virus, Sovaldi therapy

Introduction

Hepatitis C virus (HCV) infection is recognized as a major global public health problem, globally it has been estimated that 130-150million individuals are chronically infected with HCV and

that it contributes to 500 000 deaths annually, the prevalence of HCV was estimated to be 2% worldwide, with the highest prevalence observed in Egypt 7.3% in 2013 with predominance of genotype 4, (Al-Raddadi et al., 2017) & (Seida et al., 2017).

HCV infection can progress to chronicity in 70% of cases if left untreated, 14% to 45% of patients develop liver cirrhosis 20 years after acquisition of disease, and 1–5% will develop liver cancer, worldwide approximately 27% of chronic liver cirrhosis and 25% of hepatocellular carcinoma can be attributed to viral hepatitis, (Seida et al., 2017).

Optimal therapy for clients with hepatitis C virus genotype 4 infection is changing rapidly; the previous standard of care for a long time has been a combination of pegylated interferon (PEG-IFN) and ribavirin (RBV) for 48 weeks has been limited by both eligibility and tolerability, with response rates of 40%-69%, major changes have emerged during the last few years in the therapy of clients with chronic HCV, several direct acting antiviral agents (DAAs) have been developed showing potent activity with higher rates of sustained virological response (SVR), even in difficult-to-treat clients, (Eletreby et al., 2017).

Among these new drugs is Sofosbuvir, brand name (Sovaldi) which approved by FDA in 2013, sovaldi is an antiviral therapy used for HCV treatment, sovaldi cannot be used as mono therapy it should be used as a component of combination therapy with excellent tolerability and cure rate over 90%, (Elsharkawy et al., 2017).

Clients who are cured of their HCV infection experience numerous health benefits, including a decrease in liver inflammation; more than 70% reduction in the risk of liver cancer (hepatocellular carcinoma [HCC]) and a 90% reduction in the risk of liver-related mortality and liver transplantation, these reductions in disease severity contribute to dramatic reductions in all-cause mortality, furthermore, clients who

achieve SVR have a substantially improved quality of life, which spans their physical, emotional, and social health, (The American Association for the Study of Liver Disease, 2017).

Nurses play an important role in the management and care of clients with hepatitis C receiving sovaldi combination therapy they provide education about: the disease and its prevention; educate against behaviors' that risk reinfection and transmission to others; identify and address any modifiable risk factors lifestyle and psychosocial factors; educate about treatment and assess the client's desire for treatment; support during treatment; ensure monitoring for occurrence of complications during and after treatment, (Australasian Society for HIV, viral hepatitis and sexual health medicine, 2012).

Also assessing client's satisfaction is important in evaluating whether clients' needs are fulfilled and subsequently facilitating in the planning as well as implementing appropriate nursing interventions for clients, determining factors contribute most to client's satisfaction can further assist nurses in improving the quality of nursing care, (Mohamed et al., 2015).

Significance of the study:-

Egypt is challenged with a high anti-HCV prevalence in virtually all population groups and strata, so Egypt launched an ambitious national HCV treatment program aiming to treat over 250,000 chronically infected individuals per year, with the goal of achieving a national chronic infection prevalence of <2% by 2025. Despite this progress, existing evidence suggests ongoing HCV transmission in Egypt, with higher incidence levels relative to other

countries, the recent development of highly efficacious oral direct-acting antivirals (DAAs) provides opportunities for reducing HCV disease burden and its onward transmission, with the potential for eliminating this blood-borne virus as a public health concern (Abu-Raddad et al., 2018).

According to (Esmat, 2017) the number of HCV clients who registered online for appointments till end of 2016 was 1551718 client and the number of HCV clients who treated by DAA in Egypt in the period from November 2014 to December 2016 was 942000 client.

Aim of the study:

The study aimed to assess knowledge, practices and satisfaction of clients with hepatitis c virus regarding Sovaldi therapy

Research Design:

To fulfill the aim of the current study a descriptive research design was utilized for data collection.

Setting:

The study was conducted at the liver center which affiliated to ministry of health, it located in Banha city, Qalyubiyah governorate.

Research Subjects:

Purposive sample consisted of 290 clients were selected according to certain inclusion criteria:

- Adult client who are diagnosed with hepatitis C virus and receiving sovaldi therapy.
- Ages between 20 to 60 years old.

Sample size:

According to annual records the actual number of the clients receiving sovaldi therapy at Banha liver center are 5800 client from September 2014 to April 2016, the sample selected was 5% from the total number, the estimated sample size was 290 clients.

Tool for data collection:

The data were collected through using structured interviewing questionnaire; consisting of four main parts:

First part: socio-demographic characteristics and medical data which include age , gender, marital status, residence, level of education, occupation, income, methods of identifying hepatitis C, chronic diseases, family history of hepatitis C, smoking, previous treatment with interferon, previous surgery, previous blood transfusion and dental treatment it is adopted from (Zein, 2013) and modified by the investigator.

Second part: clients knowledge regarding Sovaldi therapy and HCV which include the mode of transmission, meaning, types of Sovaldi therapy, duration of treatment, contraindication, side effects of Sovaldi, times of handling, action when forgotten a dose, nutrition, diagnostic tests and time for follow up it is adopted from (Zein, 2013) and modified by the investigator.

Scoring system:-

It included question from (20-39), it was composed of 20 question (optimal score 100), the scoring system was followed according to the HCV clients' response to questions; Total knowledge score was considered correct if the score of total knowledge $\geq 60\%$ and considered

in correct if the score of total knowledge <60%.

Third part: Clients' practices regarding Sovaldi therapy through asking questions which include medication administration, diet, exercise, smoking, sharing personal items and follow up it is adopted from (Shedead, 2013) and modified by the investigator.

Scoring system:-

It included question from (40-65), it was composed of 26 question, practices score for each answer was given as follows: for practices that usually done 2 degree, practices that sometimes done 1 degree and zero for never done. Total practices score was considered as done correctly if the score of the total practice $\geq 60\%$ and considered not done practices if the score of the total practice < 60%.

Fourth part: Satisfaction assessment sheet to assess clients satisfaction regarding care provided through asking questions which include waiting list, the doctor attitude, has opportunity to ask question about treatment, potential side effects, the required investigation, availability of medication and explanation about how to take sovaldi it is adopted from (Omar, 2015) and modified by the investigator.

Scoring system:-

It included question from (66-78), it was composed of 13 question, score for each answer was given as follows: answer by yes 1 degree for satisfied, for answer as no zero degree for unsatisfied. Total satisfaction score was considered as satisfactory if the score of the total satisfaction $\geq 60\%$ and considered unsatisfactory if the score of the total satisfaction < 60%.

Validity tool: Validity tool was done by 5 experts from community health nursing staff.

Tool Reliability test: was done by using the appropriate statistics.

Pilot study: A pilot study was carried out on 10% of clients receiving sovaldi combination therapy. The aim was to determine the applicability of the study, the clarity and feasibility of the tool, as well as the time needed for filling the form. Those 10% respondents were included in the main study sample because no modification was done. This phase lasted for one week.

Field work: The actual field work was carried out over a period of 5 months from the beginning of November 2016 to the end of March 2017. The investigator was simply explained the purpose of the study to the clients who agree to participate in the study. Data was collected during study days through using the study tool by the investigator; clarifications were given whenever it was needed with reassurance about confidentiality of any obtained information. The tool was distributed to the study subject's for 3/days a week. The average time needed for the sheet was around 30 minutes.

Ethical consideration

Ethical approval was obtained from scientific research ethical committee in faculty of nursing at Ain Shams University. Permission was obtained orally from each participant; the investigator clarified the objective and aim of the study to the participants included in the study. Participants were informed that they are allowed to choose to participate or not in the study and they have right to withdraw from the study at

any time. Also the investigator assured maintaining anonymity and confidentiality of the subject's data.

Statistical design:

All data collected were organized, tabulated and analyzed using appropriate statistical test. The data were analyzed by using statistical package for social science (SPSS) version 20, which was applied to calculate frequencies and percentages as well as test statistical significance and associations by using chi-square test and person correlation test to detect the relation between the variables for (P value).

- P value >0.05 insignificant
- P value <0.05 significant
- P value <0.001 highly significant.

Results:

Regarding to socio-demographic characteristics of the study sample, **Table (1)** showed that 63.1% of the study sample aged more than 50 years old with the mean (35.23±11.58) years, and 64.5% were living in rural areas. 34.5% of the study sample were read and write, while only 24.8% are illiterate, 18.3% had secondary education, 54.5% of them were not work + (housewife) and 52.4% had income ranged from 500-1000.

Table (2): Showed that 96.2% of the clients with HCV have incorrect knowledge regarding time of handling

sovaldi therapy before and after food, 90% of them have incorrect knowledge regarding contraindication of sovaldi therapy. But 65.5% of them have correct knowledge regarding duration of treatment with sovaldi, also 57.9% of the clients with HCV have correct knowledge regarding if treatment by sovaldi provide immunity against reinfection by HCV.

Figure (1): It showed that, 71.3% of the clients with HCV had incorrect knowledge regarding sovaldi therapy while 28.7% had correct knowledge regarding sovaldi therapy.

Table (3): It revealed 67.2% of the clients with HCV usually did not took more than one dose in the same day, while 54.5% of them were sometimes avoid taking any medicines without consulting the doctor and 62.8% of them were never look for the overlap of the drug with another drug.

Table (4): It illustrated that 75.9% of the clients with HCV are satisfied from the waiting time before entering, while 56.9 of them were not satisfied because the doctor did not give them the opportunity to ask about treatment and 71.4 % of them are not satisfied because they did not have written information regarding sovaldi therapy.

Table (5): It revealed that there was a highly significant relation between total knowledge and practice scores of the clients with HCV.

Table (1): Distribution of socio-demographic characteristics of the study sample (n=290).

socio-demographic characteristics	Frequency	%
Age in years		
20-30	7	2.4
31-40	43	14.8
41-50	57	19.7
51-60	183	63.1
Mean ±SD	35.23±11.58	
Residence		
Urban	103	35.5
Rural	187	64.5
Educational qualification		
Not read and write	72	24.8
Read and write	100	34.5
Preparatory	47	16.2
Secondary	53	18.3
University	18	6.2
Occupation		
Not work + (housewife)	158	54.5
Farmer	52	17.9
Non-governmental employee	80	27.6
Income per month /pound		
Less than500pound	110	37.9
500-1000 pound	152	52.4
More than 1000 pound	28	9.7

Table (2): Distribution of clients knowledge regarding meaning, type, duration, side effects and healthy nutrition during treatment by sovaldi therapy (n=290).

Knowledge	Correct		Incorrect	
	No	%	No	%
Meaning of sovaldi	85	29.3	205	70.7
Types of sovaldi therapy	89	30.7	201	69.3
Drugs given with sovaldi	18	6.2	272	93.8
Duration of treatment with sovaldi	190	65.5	100	34.5
Contraindication of sovaldi therapy	29	10.0	261	90
Times of handling sovaldi therapy before and after food	11	3.8	279	96.2
Action when forgotten a dose of sovaldi	152	52.4	138	47.6
Vitamins should be given during treatment with sovaldi	44	15.2	246	84.8
Analgesic may be given during treatment with sovaldi	85	29.3	205	70.7
Drug contraindicated during treatment with sovaldi	33	11.4	257	88.6
Treatment with sovaldi provide immunity against recurrent hepatitis	168	57.9	122	42.1
Healthy nutrition during treatment with sovaldi	41	14.1	249	85.9
Contraindicated foods during treatment with sovaldi	40	13.8	250	86.2

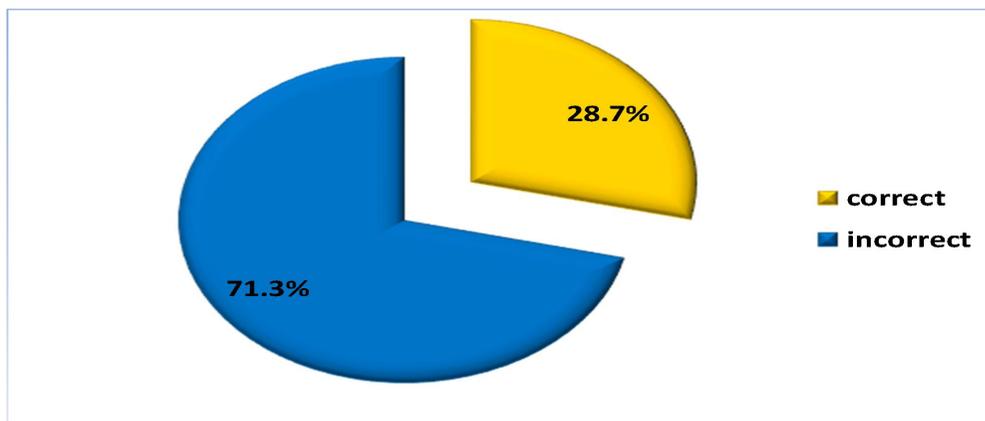


Figure (1): Distribution of clients with hepatitis c virus treated by sovaldi therapy regarding total knowledge score (n=290).

Table (3): Distribution of the client with HCV practices regarding drug administration of sovaldi therapy (n=290).

Items	Never		Sometimes		Usually	
	No	%	No	%	No	%
Take the prescribed medication on time.	6	2.1	121	41.7	163	56.2
Take the missed dose immediately as soon as remember it in the same day.	34	11.7	114	39.3	142	49.0
Do not take more than one dose in the same day.	35	12.1	60	20.7	195	67.2
Take analgesics.	68	23.4	112	38.6	110	38
Avoid taking any medicine without doctor consultation	61	21.0	158	54.5	71	24.5
Look for the overlap of sovaldi with another drug.	182	62.8	65	22.4	43	14.8
Look for the side effects of sovaldi.	169	58.3	71	24.5	50	17.2
Take vitamins and tonics without medical advice.	143	49.3	94	32.4	53	18.3
Take medical herbs without doctor consultation.	124	42.8	84	28.9	82	28.3

Table (4): Distribution of the client with HCV satisfaction toward the waiting time at the center and the care provider's attitude (n=290).

Items	Satisfied		Not satisfied	
	No	%	No	%
Entered on time	220	75.9	70	24.1
The doctor listen with interest	151	52.1	139	47.9
The doctor give the opportunity to ask about treatment	125	43.1	165	56.9
Have a clear plan for the laboratory investigation and treatment	156	53.8	134	46.2
Have written information regarding sovaldi therapy.	83	28.6	207	71.4

Table (5): Relation between total knowledge and practice scores of the client HCV

	Total Practice Score		Chi square test	P value
	Unsatisfactory No	Satisfactory %		
Total knowledge score				
Poor	168	74.1%	59	25.9%
Average	30	54.5%	25	45.5%
Good	1	12.5%	7	87.5%

Discussion

Considering socio-demographic data the present study revealed that, less than two third of the HCV client aged between 50- 60 years old with the mean (35.23±11.58) years (**Table 1**). This finding supported by **El Malky et al., (2016)** who conduct a study about the effectiveness of nursing intervention program on emotional distress, self-efficacy, and liver enzymes among Hepatitis C Virus Patients undergoing antiviral treatment therapy (sovaldi medication) in the liver institute at Shebin el kom district; who mentioned that the mean age of the HCV client was (39.5800±16.57893).

This may be attributed to the mass campaigns that were conducted to control schistosomiasis through parenteral antischistosomal therapy by health-care workers using improperly sterilized glass syringes, also may be due to the nature of

hepatitis C virus as a silent disease that it can't discovered easily.

Regarding gender, the present study revealed that, more than two thirds of the HCV clients were males. These findings were in agreement with **Shata, (2014)** who conduct a study about needs assessment of patients with chronic hepatitis c virus receiving combination therapy in Egypt; who report that more than three fourths of the HCV clients were males. This result may be due to that men are involved in more risky behaviors. In contrast, this finding disagreed with **Elsharkawy et al., (2017)** who conduct a study about sofosbuvir-based treatment regimens: real life results of chronic HCV genotype 4 patients in Egypt; who report that, the incidence of chronic hepatitis C among clients receiving sovaldi combination therapy was similar for men and women's.

Considering residence, the present study revealed that, less than two thirds of the HCV clients were resides in rural area.

This result goes in line with **Kandeel et al., (2017)** who conduct a study about the prevalence of hepatitis C virus infection in Egypt 2015: implications for future policy on prevention and treatment; report that, more than two thirds of the HCV clients were reside in rural area. This result may be due to lack in health awareness about the disease, its transmission and adapting negative health behaviors as sharing the personal items; also it may be due to the nature of clients' common occupation in rural area as farmers make them liable for bilharzias.

Regarding the educational level of the study sample, the present study revealed that, more than one third of the HCV clients were read and write, while about one fourth of the HCV clients were not read and write and the minority of the HCV clients were have a university education

This finding were in agreement with **Rezik, (2012)** who conduct a study about assessing knowledge for patients with chronic hepatitis c receiving interferon therapy in Egypt; who report that, more than one fourth of the HCV clients were not read and write and the minority of the HCV clients were have a university education. The educational level may effect on the client's ability to cope with their own health problems, low educated clients are prone to have more health problems because they have false beliefs and false health practice as re-use the syringes. However this finding was in disagreement with **El Malky et al., (2016)** who mentioned that four fifth of the HCV clients were highly educated.

Regarding clients knowledge about meaning and types of sovaldi combination therapy, the present study revealed that, more than two thirds of the HCV clients had incorrect knowledge **Table (2)**. This finding agrees with **Shata,**

(2014) who conduct a study about needs assessment of patients with chronic hepatitis c virus receiving combination therapy in Egypt; who report that there were unsatisfactory levels of patients' knowledge about combination therapy. This results may be due to the health care provider did not have enough time to explain to the HCV clients about the treatment used and also the HCV clients may be not aware about their rights to receive enough explanation about the treatment before starting the course.

Regarding clients' knowledge about duration of treatment with sovaldi therapy, the present study represent that, about two thirds of the HCV clients had correct knowledge; this finding agrees with **Zein, (2013)** who conduct a study about assessing the knowledge regarding interferon therapy and short term follow up among HCV patients at kafer el-sheikh liver and heart institute; who mentioned that, the majority of the subjects know the treatment period. This result may be due to that the duration of treatment is considered as basic information given to the clients by the health care provider.

Regarding clients' knowledge about times of handling sovaldi therapy, contraindication of sovaldi therapy and drug contraindicated during treatment course, the present study stated that, the majority of the HCV clients had incorrect knowledge; these findings were supported by **Shata, (2014)** who report that there were unsatisfactory levels of patients' knowledge about the treatment. This result may be due to insufficient medical counseling and the educational level of the HCV clients which affect on their ability to read medication pamphlet and medical instruction given by health care provider.

Regarding to total knowledge score of clients with hepatitis c virus

treated by sovaldi therapy, the current study revealed that, more than two thirds had incorrect knowledge regarding HCV and sovaldi combination therapy **Figure (1)**. These findings were supported by **Radhwan, (2016)** who conduct a study about the perceived learning needs of patients with hepatitis C to control associated health problems in Menofia; who report that there are inadequate levels of knowledge regarding HCV, its mode of transmission and methods of prevention. This result may be due to lowering the educational level of study sample. These findings disagree with **Zein, (2013)** who mentioned that, more than two thirds of the studied sample had average level of knowledge and one fourth of the studied sample had acceptable level knowledge.

Regarding to drug administration practice, the current study reported that, more than half of HCV clients usually take the prescribed medication on time, more than two thirds of them do not take more than one dose in the same day and more than half of them were sometimes avoid taking any medicines without consulting the doctor **Table (3)**. These findings were supported by **Awad, (2016)** who mentioned that, the majority of the HCV clients committed with taking regular treatment and two thirds of them avoid taking the medication without consulting the doctor. This result may be due to the hope of the HCV client to get cured so they adhere to their health care providers instructions about drug administration.

In contrast, two thirds of them were never look for the overlap of the drug with another drug and never look for the side effects of any drug, it may be due to lack in the clients' awareness and low educational level in most of the study sample.

Regarding to the studied sample satisfaction toward the waiting time at the center, the current study revealed that, three quarters of the studied samples are satisfied from the waiting time before entering **Table (4)**. These findings were supported by **El batish, (2012)** who conducts a study about client satisfaction with health services offered in the ministry of health hospitals in menoufiya after application of total quality management program; she mentioned that more than the halves of the HCV client were satisfied. It may be due to smooth organization and cooperation between the staff in the center.

Also, these findings supported by **Ekaterina et al. (2017)** who conduct a study about measurement of patient satisfaction as a quality indicator of hospital health services: the case of outpatient clinics in general hospital, he report that the largest proportion were satisfied.

Regarding to the studied sample satisfaction toward the health care provider's attitude; more than two thirds of them are not satisfied because they did not have written information and more than half of the HCV clients were not satisfied because the health care provider did not gave them opportunity to ask about treatment. These findings disagree with **El batish, (2012)** who mentioned that the majority of the study clients were highly satisfied from the doctor's complete explanation about the disease and only less than one fourth of the clients were not satisfied from the opportunity given by doctors to clients to ask about their illness.

The difference between the current study and the other mentioned studies may be attributed to the comprehensive surveillance program and facilities provided by MOHP in receiving sovaldi

therapy; which resulting in explore more cases and increase work overload on the health care provider.

The current study revealed that there was a highly statistical significant differences between total knowledge and practice scores of the studied subjects **Table (5)**. These findings were supported by **Shedead, (2013)** who conduct a study about hepatitis C Virus: health awareness and practices among male university students in Egypt; who mentioned that there was high statistical significant difference between the studied sample awareness towered HCV and their practices.

It may be attributed to the study subjects' level of knowledge; according to the current study more than two thirds have incorrect knowledge score which influence on their practice negatively.

In contrast this finding disagrees with **Awad, (2016)** who conduct a study about quality of life of hepatitis c patients undergoing interferon therapy in benha city; who report that there was no statistical significant difference between total knowledge score and total practices.

Conclusion

More than two thirds of the HCV client had incorrect knowledge regarding HCV and sovaldi combination therapy. Less than one third of the HCV client had done correctly practices regarding sovaldi combination therapy. More than two thirds of the HCV clients were unsatisfied from the quality of care provided.

There are significant association between the clients total knowledge score and educational qualification, occupation

and income. There was a highly statistical significance association between total practice score and their educational qualification and their age. There are highly statistical significance association between total satisfaction score and their income. Also there was positive correlation between client knowledge, practices and satisfaction.

Recommendations

In the light of these findings it can be recommended that:

1. Health educational sessions should be conducted in the liver center to the client receiving sovaldi therapy regarding:

➤ The appropriate practices toward sovaldi administration.

➤ The appropriate nutrition during treatment with sovaldi to improve the liver health for better response to treatment and to prevent anemia as near half of the HCV client report that they are suffering from anemia.

2. Increase client awareness about the possibility of re infection, the restricted and over the counter medication during treatment with sovaldi.

3. Availability comprehensive Arabic booklet to the clients which simply illustrate information about sovaldi combination therapy, how to be prepared before treatment and the required health practice during and after treatment.

4. Further research on appropriate practices needed for clients treated by sovaldi therapy and how to improve the client satisfaction in healthcare setting.

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