Prevalence, knowledge, and attitude toward complementary and alternative medicine use among patients with chronic hepatitis C in Upper Egypt

Soha S. Abdel-Moneim, Ahmad F. Al-Sayed Hasanain, Zeinab R. Mohammed

Department of Tropical Medicine and Gastroenterology, Faculty of Medicine, Assiut University, Assiut, Egypt

Correspondence to Zeinab R. Mohammed, MSc, Department of Tropical Medicine and Gastroenterology, Faculty of Medicine, Assiut University, Assiut, Egypt
Tel: +20 101 851 2202; Postal Code: 71728; e-mail: z.zedan@outlook.com

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Background
Complementary and alternative medicine (CAM) encompasses different types of treatments and procedures that are based on traditions and are not scientifically sound; however, they are still used to 'complement' physician-prescribed drugs. Unfortunately, we lack local studies about CAM usage in patients with chronic hepatitis C (CHC) in Egypt.

Aim
The aim was to establish CAM prevalence among patients with CHC attending Assuit University Hospital and explore the knowledge and attitude toward using CAM among patients with CHC while using the interferon-based therapy and direct-acting antiviral drugs (DAAs).

Patients and methods
A cross-sectional survey using a screening questionnaire was used to collect data from patients attending Assiut University Hospital from April 2015 to April 2016.

Results
Of 750 patients, knowledge about CAM was positive among 610 (81.3%) patients, a positive attitude toward CAM was seen among 570 (76%) patients, and 479 (63.9%) patients stated using CAM. Of the 250 patients who used DAAs, 194 (77.6%) have used CAM, and 19 (9.7%) of them would continue on CAM after the use of DAAs.

Conclusion
A total of 479 (63.9%) patients used CAM in the study (285 undergoing interferon-based therapy and 194 at DAAs). Approximately, two-thirds of patients have used more than one type of CAM during the course of their disease. A small percentage (9.7%) of patients is still willing to continue using CAM even after the use of DAAs.

Keywords:
complementary and alternative medicine, chronic hepatitis C, direct acting antiviral drugs

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Introduction

The term complementary and alternative medicine (CAM) encompasses different types of treatments and procedures not included in conventional medicine. Many of these practices are still used to 'complement' physician-prescribed drugs [1]. Despite the absence of evidence for clinical efficacy of CAM, the worldwide annual market for its products approaches US$ 60 billion [2].

Generally, herbal medicine and multivitamins are the commonest used types of CAM in chronic hepatitis C (CHC) [3,4]. Hepatitis C virus (HCV) infection prevalence in Egypt is 14.7% [5]. Patients in desperation resort to using CAM in addition to prescribed medication hoping to find a cure for their disease. Unfortunately, we lack local studies about CAM usage in patients with CHC in Egypt.

Aim

The aim is to establish CAM prevalence and associated factors among patients with CHC attending Assuit University Hospital and explore the knowledge and attitude toward using CAM for patients with CHC during interferon (INF)-based therapy, and in the era of direct-acting antiviral drugs (DAAs).

Patients and methods

A cross-sectional survey was used to collect data from patients attending the outpatient clinic and inpatient ward of tropical medicine and Gastroenterology Department, Assiut University, from April 2015 to April 2016. Patients with chronic HCV were included. Chronic HCV infection was documented by the presence of positive anti-HCV and HCV RNA.

The study included 750 patients with CHC infection; 500 (66.7%) of them were using INF-containing regimens (group I), whereas the other 250 (33.3%) were using DAAs (group II).

Knowledge means awareness of different types of CAM and their usage in CHC, and attitude means the future capability to use them.

The questionnaire was pilot tested and validated regarding wording and the time needed for completion. Several types of CAM treatments such as silymarin, antioxidants, *Nigella sativa, Origanum majorana*, herbs, honey, bee wax, bee sting, pollen, liquorice, olive oil, *Citrus aurantium*, camel milk, camel urine, schizomycetes, hijama, acupuncture, pigeon clicks, Zamzam water, religious scripts, and wizardy were inquired about.

Various epidemiological, social, and medical data were collected; these included age, sex, religion, occupation, education status, residence, travel abroad, duration of HCV infection, and knowledge of cirrhosis, ascites, varices, presence of hepatocellular carcinoma, type of medications used, and infection among other family member.

Ethics and consents

The study was approved by the Ethics Committee of Faculty of Medicine. Before distribution of the questionnaire, a background about the survey and its reason for application was explained to the patients, and they were encouraged to participate without pressure.

Statistical analysis

The data were entered and edited using the statistical package for the social sciences (SPSS, version 22; Chicago, Illinois, USA). Results were expressed as mean ± SD or frequency (percentage). The χ^2-test was used to analyze differences among categorical variables. Student's *t*-test was used to analyze numeric variables. A *P* value of less than 0.05 was considered significant. An odds ratio (OR) and 95% confidence interval (CI) were used to determine the association between significant factors. Multivariate regression analysis was done to identify the independent predictors of CAM use.

Results

Demographic data collected from the studied groups are shown in Table 1.

Table 1 Demographic characteristics of all patients with chronic hepatitis C infection included in the study groups I and II

Variables	Categories	Total study (*n*=750)	Group I (*n*=500)	Group II (*n*=250)
Age (years)		54.89±10.92	52.11±12.42	55.34±13.23
	<40	189 (25.2)	107 (21.4)	82 (32.8)
	≥40	561 (74.8)	393 (78.6)	168 (67.2)
Sex	Male	435 (58)	288 (57.6)	147 (58.8)
	Female	315 (42)	212 (42.4)	103 (41.2)
Religion	Muslim	555 (74)	362 (72.4)	193 (77.2)
	Christian	195 (26)	138 (27.6)	57 (22.8)
Occupation	Employee	150 (20)	93 (18.6)	57 (22.8)
	Worker	148 (19.7)	85 (17.0)	63 (25.2)
	Farmer	140 (18.7)	98 (19.6)	40 (16.0)
	Student	21 (2.8)	11 (2.20)	10 (4.0)
	Unemployed	291 (38.8)	213 (42.6)	80 (32.0)
Education status	Illiterate	271 (36.1)	188 (37.6)	83 (33.2)
	Primary/ preparatory	233 (31.1)	156 (31.2)	77 (30.8)
	Secondary	139 (18.5)	108 (21.6)	31 (12.4)
	University	107 (14.3)	48 (9.60)	59 (23.6)
Residence	Rural	514 (68.5)	355 (71.0)	159 (63.6)
	Urban	236 (31.5)	145 (29.0)	91 (36.4)
Travel abroad	No	482 (64.3)	272 (54.4)	210 (84.0)
	Yes	268 (35.7)	228 (45.6)	40 (16.0)

Continuous data were expressed in the form of mean±SD whereas nominal ones in the form of *n* (%)

Knowledge data about complementary and alternative medicine and its predictors in the studied groups

Of the 750 patients, 610 (81.3%) patients had knowledge about CAM, 479 (78.5%) of them had already used CAM, 131 (21.5%) had knowledge about CAM but did not use it, and 140 (18.7%) patients had no knowledge about CAM [Table 2].

Attitude toward complementary and alternative medicine and factors associated with it in the studied groups

Of the 750 patients, 570 (76%) patients had appositive attitude toward CAM; of them, 479 (84%) had already used CAM, 91 (16%) had appositive attitude toward using CAM but had not use it, and 180 (24%) patients had a negative attitude toward CAM [Table 3].

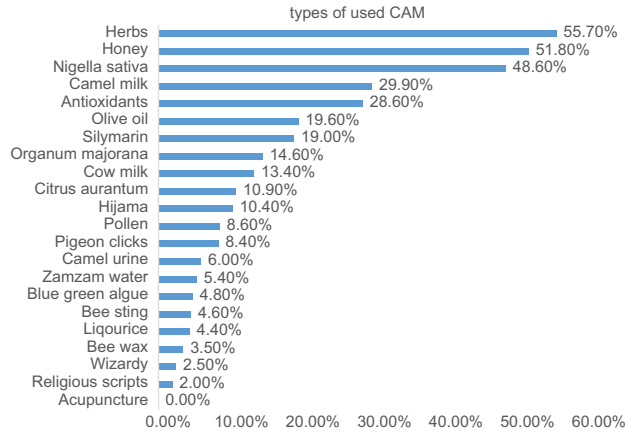
Demographic characteristics of patients using complementary and alternative medicine in the study

Of 750 patients, 479 (63.9%) were using CAM (all of them have a previous knowledge and appositive attitude toward CAM): 285 (59.5%) of them while using INF-based regimen, whereas 194 (40.5%) of them while using DAAs [Table 4].

Characteristics of patients using complementary and alternative medicine among group I and group II

Figure 1: Bar chart showing the percentage of each type of used CAM.

Figure 1



Percentage of different complementary and alternative medicine types used among the study participants. CAM, complementary and alternative medicine.

Table 2 Factors affecting patients with knowledge of complementary and alternative medicine in the study

Variables	Knowledge of complementary and alternative medicine		*P* *
	Yes (*n*=610)	Non (*n*=140)	
Age (years)			
<40	105 (17.2)	84 (60)	0.000*
≥40	505 (82.8)	56 (40)	
Religion			
Muslim	460 (75.4)	95 (32.1)	0.043
Christian	150 (24.6)	45 (67.9)	
Sex			
Female	239 (39.2)	76 (54.3)	0.001*
Male	371 (60.8)	64 (45.7)	
Residence			
Rural	470 (77)	44 (31.4)	0.000*
Urban	140 (23)	96 (68.6)	
Education			
Illiterate	244 (40)	27 (19.3)	0.000*
Educated	366 (60)	113 (80.7)	
Occupation			
Unemployed	248 (40.7)	64 (45.7)	0.159
Employed	362 (59.3)	76 (54.3)	
Travel abroad			
No	361 (59.2)	121 (86.4)	0.000*
Yes	249 (40.8)	19 (13.6)	
Attitude toward complementary and alternative medicine			
No	72 (11.8)	108 (77.1)	0.000*
Yes	538 (88.2)	32 (22.9)	
Use of complementary and alternative medicine			
No	131 (21.5)	140 (100)	0.000*
Yes	479 (78.5)	0 (0)	

*By Chi-Square test and considered significant if <0.05. Data were expressed in the form of *n* (%)

The most commonly used CAM are herbs 267 (55.7%), honey 248 (51.8%), and nigella sativa 233 (48.6%). The religious scripts had surprisingly low frequency of use, whereas acupuncture was not used at all by participants. Satisfaction rate was highest with bee wax (100%), whereas lowest with bee sting (13.6%) [Table 5].

While using DAAs, 19 (7.6%) patient of 194 (77.6%) who used CAM still have future positive attitude toward using some types of CAM after using DAAs; most of them were of least 40 years 13 (68.4%), Muslims 12 (63.2%), males 11 (57.9%), from rural areas 14 (73.7%), illiterate 10 (52.6%), unemployed 11 (57.9%), and did not travel abroad 17 (89.5%).

Using multivariate analysis

The independent predictors of knowledge of CAM in the study were male sex (P = 0.033; OR = 1.713; 95% CI = 1.044–2.810) and rural residence (P = 0.000; OR = 0.344; 95% CI = 0.209–0.568).

The independent predictors of appositive attitude toward CAM were older age (P = 0.000;

Table 3 Factors affecting patients with a positive attitude toward complementary and alternative medicine in the study

Variables	Attitude toward complementary and alternative medicine		*P* *
	Positive (*n*=570)	Negative (*n*=180)	
Age (years)			
<40	72 (12.6)	117 (65)	0.000*
≥40	498 (87.4)	63 (35)	
Religion			
Muslim	422 (74)	133 (73.9)	0.520
Christian	148 (26)	47 (26.1)	
Sex			
Female	227 (39.8)	88 (48.9)	0.020*
Male	343 (60.2)	92 (51.1)	
Residence			
Rural	454 (79.6)	60 (33.3)	0.000*
Urban	148 (20.4)	120 (66.7)	
Education			
Illiterate	248 (43.5)	23 (12.8)	0.000*
Educated	322 (56.5)	157 (87.2)	
Occupation			
Unemployed	245 (43)	67 (37.2)	0.000*
Employed	325 (57)	113 (62.8)	
Travel abroad			
No	231 (40.5)	151 (83.9)	0.000*
Yes	239 (59.5)	29 (16.1)	
Use of complementary and alternative medicine			
No	91 (16)	180 (100)	0.000*
Yes	479 (84)	0 (0)	

*By Chi-Square test and considered significant if <0.05. Data were expressed in the form of *n* (%)

Table 4 Demographic characteristics of patients from group I and group II using complementary and alternative medicine in the study *n*=479

Variables	Categories	Patients' data (*n*=479)
Age (years)		53.13±12.56
	<40	68 (14.2)
	≥40	411 (85.8)
Sex	Male	298 (62.2)
	Female	181 (37.8)
Religion	Muslim	353 (73.7)
	Christian	126 (26.3)
Occupation	Employee	63 (13.2)
	Worker	119 (24.8)
	Farmer	108 (22.5)
	Student	2 (0.4)
	Unemployed	187 (39.0)
Education status	Illiterate	191 (39.9)
	Primary/preparatory	180 (37.6)
	Secondary	76 (15.9)
	University	32 (6.7)
Residence	Rural	376 (78.5)
	Urban	103 (21.5)
Travel abroad	No	279 (58.2)
	Yes	200 (41.8)
Antiviral drug use	Interferon-containing regimen	285 (59.5)
	Direct-acting antiviral drugs	194 (40.5)
Source of complementary and alternative medicine	Nonmedical	419 (87.5)
	Medical	60 (12.5)

Continuous data were expressed in the form of mean±SD whereas nominal ones in the form of *n* (%)

OR = 9.968; 95% CI = 3.760–26.420), rural residence (P = 0.004; OR = 0.332; 95% CI = 0.155–0.710), education (P = 0.003; OR = 0.167; 95% CI = 0.167–0.700), and employment (P = 0.018; OR = 0.426; 95% CI = 0.210–0.865).

Discussion

This study shows high rates of knowledge 610 (81.3%), positive attitude 570 (76%), and prevalence 479 (63.9%) of use of CAM among patients with CHC. They consider CAM as safe and expected natural products to ameliorate their symptoms, complementing the conventional treatment. In agreement with our study results, Al-Faris *et al.* [6], and Al-Zahim *et al.* [7], reported high prevalence of use and appositive attitude toward CAM among patients with CHC (68 and 55.6%, respectively).

In contrast, a study of diabetic patients in Jordan found 31% prevalence rate of CAM use [8]. The higher prevalence in our study could be explained by the different nature of the disease and cultural, social, and religious differences.

Table 5 Characteristics of patients using complementary and alternative medicine among group I and group II

Variables	Group I (*n*=285)	Group II (*n*=194)
Age (years)		
<40	26 (9)	42 (21.6)
≥40	259 (91)	152 (78.4)
Sex		
Female	106 (37.2)	75 (38.7)
Male	179 (62.8)	119 (61.3)
Religion		
Muslim	208 (73)	145 (74.7)
Christian	77 (27)	49 (25.3)
Residence		
Rural	237 (83.3)	139 (71.6)
Urban	48 (16.7)	55 (28.4)
Education		
Illiterate	111 (40)	114 (58.8)
Educated	174 (60)	80 (41.2)
Occupation		
Unemployed	195 (68.4)	144 (74.2)
Employed	90 (31.6)	50 (25.8)
Duration of hepatitis C virus infection (years)		
≤5	161 (56.5)	94 (48.6)
>5	124 (43.5)	100 (51.4)
Knowledge of cirrhosis		
No	114 (40)	59 (30.4)
Yes	171 (60)	135 (69.6)
Knowledge of hepatocellular carcinoma		
No	258 (90.5)	194 (100)
Yes	27 (9.5)	0 (0)
Knowledge of varices		
No	186 (65.3)	164 (84.5)
Yes	99 (34.7)	30 (15.5)
Knowledge of ascites		
No	193 (67.7)	159 (82)
Yes	92 (32.3)	35 (18)
Infection of family member with hepatitis C virus		
No	209 (73.3)	166 (85.6)
Yes	76 (26.7)	28 (14.4)
Use of interferon-based regimen		
No	42 (14.7)	21 (10.8)
Yes	243 (85.3)	173 (89.2)
Source of complementary and alternative medicine		
Nonmedical	251 (88.1)	168 (86.6)
Medical	34 (11.9)	26 (13.4)
Travel		
No	124 (43.5)	155 (79.9)
Yes	161 (56.5)	39 (20.1)

Data were expressed in the form of *n* (%)

Our study patients using CAM were older in age, reflecting long standing concepts about CAM use in agreement with other studies [3,7]. Moreover, more male patients used CAM, may be because of better knowledge gained from outdoor activities; this was different from the results from Kingdom of

Saudi Arabia and USA, where females used CAM more frequently [7,9].

The factors that were associated more with CAM use among our study population were rural residence, unemployment, illiteracy, and lack of travel abroad; this may be explained by some cultural factors and because of low level of education and the financial ability to meet the costs of conventional medical treatment. Moreover, more Muslims used CAM; they strongly believed in its benefits, which was consistent with their religious concepts. The most frequently detected sources of information regarding CAM use were nonmedical, which correlates with the findings among Saudi patients [7].

The factors associated with CAM use among participants of both eras were similar regarding age, religion, residence, occupation, and travel abroad, except for education was associated with CAM usage in group I, whereas illiteracy was associated with CAM usage among group II. In USA, Richmond and colleagues, found that education was associated with CAM use as they considered a higher level of education increases the likelihood that people will teach themselves about CAM [8].

Patients with HCV infection duration up to 5 years with no knowledge of complications of cirrhosis such as varices, ascites, or hepatocellular carcinoma were using CAM more frequently reflecting that the longer the duration of HCV and the more knowledge of complications by such patients lead them to look for conventional therapy of HCV. Ferrucci *et al*. [10], showed the similar finding.

Knowledge of HCV among relatives of patients with CHC was associated with less use of CAM among such patients, so this knowledge encourages patients to seek a more dependable treatment.

Only 19 (9.7%) patients using CAM in group II were willing to continue using CAM after using DAAs.

In our study, herbs, honey, and nigella sativa were the most commonly used (55.7, 51.8, and 48.6% respectively); this was in agreement with a Saudi study where nigella sativa, honey, and herbs were used (39.1, 39, and 31.8%, respectively) [7]. In contrast, Ferrucci *et al*. [10], found that vitamins and other dietary supplements were the most commonly used CAM by (18.1%) patients followed by herbal medicine (16.8%) and homeopathy (1.5%).

In agreement with our study, White *et al*. [11], showed that the overall satisfaction level for all types of CAM use was very high. No patients reported that any of the CAM therapies worsened their condition [11].

Conclusion

There is a high prevalence of CAM use among patients with CHC. CAM represents a medical and health care practice in our locality.

Future randomized clinical trials are warranted to evaluate the efficacy and safety of the commonly used herbal ingredients in the treatment of CHC.

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Conflicts of interest

There are no conflicts of interest.

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