ORIGINAL ARTICLE

Annals of Agricultural and Environmental Medicine 2022, Vol 29, No 4, 529–537
www.aaem.pl

Expectations of patients with hepatitis C from family physicians – a Polish example

Lidia Sierpińska[1,A-F]

[1] *Independent Public Health Care Unit, Military Clinical Hospital No. 1 with Polyclinic, Lublin, Poland*
A – Research concept and design, B – Collection and/or assembly of data, C – Data analysis and interpretation, D – Writing the article, E – Critical revision of the article, F – Final approval of the article

Sierpińska L. Expectations of patients with hepatitis C from family physicians – a Polish example. Ann Agric Environ Med. 2022; 29(4): 529–537. doi: 10.26444/aaem/157357

Abstract

Introduction. In Poland, approximately 1.9% of the general population is infected with Chronic hepatitis C (HCV), which develops in about 70–80% of infected patients who require constant care from family physicians.
Objective. The aim of the study was to define the kinds of expectations of patients with chronic HCV from family physicians.
Materials and method. The study included 220 patients with HCV, and was conducted using a dignostic survey, the Patient Request Form (PRF) and an author-constructed questionnaire.
Results. The respondents most often expected from a family physician, an explanation of the disease (9.67 scores), and obtaining information concerning examinations and treatment (9.65 scores), while to a lesser degree, emotional support (6.92 scores). Respondents with higher education to a significantly higher degree expected an explanation of the essence of the disease. Patients who were inactive occupationally significantly more frequently expected emotional support and information concerning examinations and treatment. Respondents who considered themselves disabled due to HCV, to a significantly higher degree expected emotional support and information concerning examinations and treatment. The remaining variables: age, gender, place of residence, marital status, self-reported state of health and ordered, diet had no significant effect on the expectations of patients with chronic hepatitis C from family physicians.
Conclusions. Patients with HCV, to the highest degree expected an explanation of the disease and information concerning examinations and treatment, and to a lower degree – emotional support during consultations.

Key words

family physicians, information, patient care, patients infected with HCV

INTRODUCTION

Hepatitis C still remains an important problem in Poland, affecting approximately 1.9% of the population, and approximately 2.2–3% of the population worldwide. The area at the lowest risk are the Scandinavian countries with less than 0.1% of the population infected. In Egypt, Mohamoud et al. reported that 5–7 million of the population (more than 20.0%) are chronically infected with HCV [1]. In China, 10 million patients are infected with the hepatitis C virus, which amounts to 14% of the global population infected with HCV [2].

It should be emphasized that the number of individuals infected with the hepatitis C virus (HCV) is difficult to estimate because many people are unaware that they are infected. A team of researchers from the USA led by Kamili indicated that humans are the only reservoir and source of HCV infection [3]. Saadi and Khoury reported that global mortality due to HCV infection is estimated at about 500.000 deaths annually [4]. Hepatitis C virus is transmitted by blood. It proliferates (replicates) mainly in hepatocytes, but may also be detected in other organs: lymph nodes, pancreas, spleen, adrenal glands, salivary glands, bone marrow cells, and brain microglial cells. Dunvan and Urbanowicz confirmed that multiple mutations of HCV are the cause of difficulties with treatment, and the lack of a vaccine worldwide [5].

✉ Address for correspondence: Lidia Sierpińska, Independent Public Health Care Unit, Military Clinical Hospital No. 1 with Polyclinic, Lublin, Poland
E-mail: sierpinska1@wp.pl

Received: 16.11.2022; accepted: 12.12.2022; first published: 20.12.2022

Infection with hepatitis C virus often takes place without characteristic symptoms -80% of those infected may be asymptomatic. Yang and Roberts observed that hepatitis C may manifest itself only after many years of duration of the disease in the form of cirrhosis of the liver, or hepatocellular carcinoma, which develops within 20–30 years [6]. This view is confirmed by Polish researchers [7, 8].

Epidemiological data published by two teams of researchers, Zakrzewska et al. and Sakem et al., indicate that infections with HCV are associated with medical procedures performed in health care units [9, 10], and infections also concern medical staff employed in health care facilities [11]. In Poland, according to Sierpińska, this is associated with occupational exposure through a needlestick or cut with other sharp instruments contaminated with infected blood [12]. Screening examinations carried out in 2017 among medical staff in the Asyut Province in Egypt showed that 6.3% of the examined persons were infected with HCV, diagnosed using PCR test [13]. Atław et al. confirmed that 5.0% of health care professionals in Africa suffer from hepatitis C [14].

The Polish Group of HCV Experts recommend that an important aspect in the course of hepatitis C is the provision of early diagnostics, pharmacological and dietary treatment of infected patients. A patient who has found out about infection with HCV frequently experiences many concerns in association with treatment, prognosis, and further functioning in family and social life [15]. Therefore, patients with hepatitis C should remain under constant medical supervision in ambulatory conditions [16]. Family physicians should provide them with professional medical assistance, together with a sense of security.

Thus, it is considered important to recognize the opinions of patients with chronic hepatitis C concerning their expectations from a family physician in the area of explanation of the essence of the disease, obtaining information about treatment, as well as emotional support.

OBJECTIVE

The aim of the study was to define the kinds of expectations of patients with chronic hepatitis C from family physicians.

MATERIALS AND METHOD

Population. The study included 220 patients infected with HCV. The respondents' mean age was 54.7±12.69, the youngest respondent was aged 18, the oldest – 87. The number of females participating in the study was slightly higher (52.3%) than that of males (47.7%). In the examined group there were twice as many urban than rural inhabitants (66.8% and 33.2%, respectively).

The criterium for the qualification of adults into the study was confirmed by medical diagnosis with hepatitis C. It should be noted that collecting the research material was especially difficult due to the fear of stigmatization. Many respondents refused to participate in the study due to concerns about their identification by employers, family or friends.

The study group were mainly patients who received constant ambulatory treatment in family physician clinics. The clinics were within the structure of seven hospitals located in four provinces in Poland. The study also included students of the Higher School in Radom, the members of their families and relatives also treated as outpatients by family physicians in several outpatient clinics in one of the four provinces. The survey was conducted after obtaining the respondents' consent to participate in the anonymous study.

The research material was collected during the period 2014–2018, after obtaining a consent from by the Senate of the Higher School in Radom (No. 8/2014).

Own study was conducted by the method of a diagnostic survey, using two research tools. The first tool was a standardized questionnaire constructed for the purpose of this study containing, among others, questions pertaining to social and demographic data, as well as questions concerning self-reported health, the feeling of being a disabled person, and dietary orders by a physician after diagnosing hepatitis C. The second tool was a standard Patient Request Form (PRF) by Peter Salmon and John Quine (Polish adaptation by Zygfryd Juczyński) [10]. The PRF test consists of 18 statements concerning various reasons for reporting to a family physician for advice. While replying to each statement the respondents selected one of the three answers: 'Yes', 'I am not certain', or 'No'. The statements referred to patients' feelings after a personal medical visit. The questions concerned the engagement of a family physician in the explanation of the disease – its essence, future course, cause, and pathological symptoms. They also concerned the expectations from a family physician with respect to emotional support, which included advice about psychological status, conversations about feelings associated with the disease, sources of the causes of emotional problems, and receiving encouragement in difficult times. The criteria of replies also concerned expectations from a physician with respect to obtaining information about examinations and treatment: results of diagnostic tests and their discussion, confirmation of the diagnosis, referral to a specialist, advice about medications taken, the risk of side-effects of the disease, instructions about how to take medicines, explanation of the applied treatment.

Statistical analysis. The research material was statistically analyzed using the software package StatSoft Statistica 13.1 PL. and the Microsoft Office suit. Chi^2 test was applied. The p values lower than 0.05 were considered statistically significant. Distribution of the quantitative data was performed by means of the Shapiro-Wilk test, which occurred to be inconsistent with normal distribution; therefore, only non-parametric analyses were performed. In order to compare two group, the Mann-Whitney U test was applied (MWU. Z), whereas three or more groups were investigated by Kruskal-Wallis test (KW. H). Spearman (R) correlation coefficient was also used.

RESULTS

Socio-demographic characteristics. The study included 220 adults with the diagnosis of chronic hepatitis C. Table 1 includes basic socio-demographic characteristics (independent variables).

Table 1. Structure according to gender, age, level of education, place of residence, marital status, occupational activity, including sources of maintenance

TYPE OF VARIABLE – INDEPENDENT VARIABLE			
Variable	Category	N	%
Gender	female	115	52.3
	male	105	47.7
Age	18–35	15	6.8
	36–50	68	30.9
	51–65	93	42.3
	66–87	44	20.0
Level of education	primary	21	9.5
	primary vocational	84	38.2
	secondary school	82	37.3
	higher	33	15.0
Place of residence	rural area	73	33.2
	urban area	147	66.8
Marital status	never married	40	18.2
	married	109	49.5
	divorced	30	13.6
	widowed	41	18.6
Occupational activity and sources of maintenance	occupational activity	88	40.0
	invalidity allowance	87	39.5
	occupational pension	31	14.1
	unemployment benefit	8	3.6
	sick leave	3	1.4
	student	2	0.9
	rehabilitation benefit	1	0.5

Expectations from a family physician according to the PRF scale. The scope of each scale is from 0 – 12 scores. The higher the result, the higher the expectations for a given type of support/assistance for patients with hepatitis C from a family physician (Tab. 2, Fig. 1).

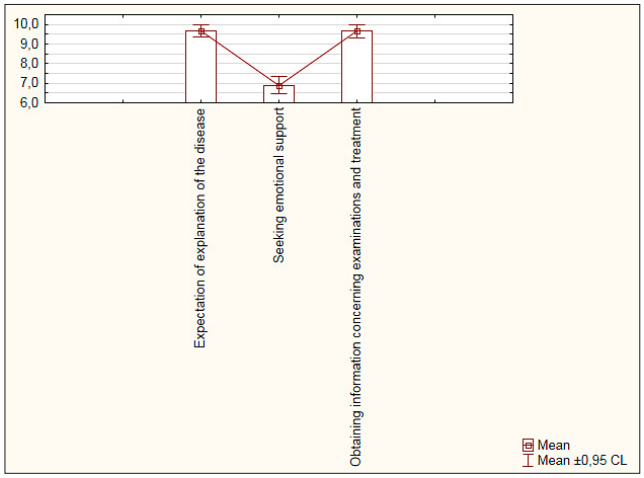

Figure 1. Distribution of the results of patients' expectations according to the PRF scale

Expectations from a family physician according to age. The presented research material contains results concerning the expectations of patients from a family physician according to age (Tab. 3, Fig 2).

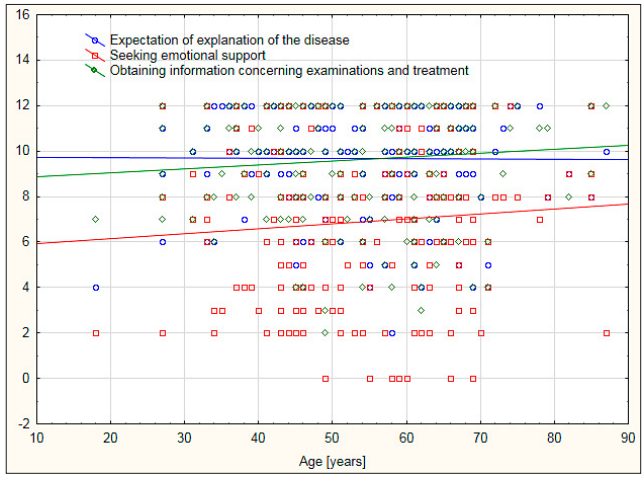

Figure 2. Distribution of results of patients' expectations according to the PRF scale by age

Table 2 and Figure 1 demonstrate that the majority of patients expected from a family physician an overall explanation of the disease – mean PRF score 9.67, and obtaining information concerning examinations and treatment – mean PRF score 9.65. The study showed that, to a small degree, the patients expected emotional support from a family physician – mean PRF score 6.92. The values ranged from 1–0 scores.

The largest number of respondents in the study were aged 51–65 (42.3%). The oldest group aged 66–87 constituted 20.0%. Statistical analysis showed that the older the respondents, the higher the degree of their expectations for obtaining information about examinations and treatment (R=0.11), and emotional support due to hepatitis C (R=0.06); however, the relationship was insignificant.

Table 2. Patients' expectations according to the Patient Request Form (PRF)

Subscales	M*	SD*	95% CI*		Min*	Max*	Q25*	Me*	Q75*
			Lower	*Upper*					
Expectation of explanation of the disease	9.67	2.30	2.10	2.54	2.00	12.00	8.00	10.00	12.00
Seeking emotional support	6.92	3.37	3.08	3.72	0.00	12.00	4.00	7.00	9.00
Obtaining information concerning examinations and treatment	9.65	2.38	2.18	2.63	2.00	12.00	8.00	10.00	12.00

*M – mean; SD – standard deviation; CI – confidence interval; Min – minimum; Max –maximum; Me – median; Q25, Q75 – quartiles

Table 3. Patients' expectations according to the Patient Request Form (PRF), according to age

Sub-scales:	Age	M*	SD*	95% CI*		Min*	Max*	Q25*	Me*	Q75*	Spearman's R	p
				Lower	*Upper*							
Expectation of explanation of the disease	18–35	**9.27**	2.63	1.93	4.15	4.00	12.00	6.00	**10.00**	12.00	-0.01	0.836
	36–50	**10.06**	1.96	1.68	2.36	4.00	12.00	9.00	**10.00**	12.00		
	51–65	9.32	2.47	2.15	2.89	2.00	12.00	8.00	10.00	12.00		
	> 65	9.93	2.25	1.86	2.86	4.00	12.00	9.00	10.00	12.00		
Seeking emotional support	18–35	5.80	3.93	2.88	6.20	2.00	12.00	2.00	6.00	8.00	0.06	0.362
	36–50	6.96	3.44	2.94	4.14	0.00	12.00	4.00	7.00	10.00		
	51–65	7.04	3.26	2.84	3.81	0.00	12.00	5.00	7.00	9.00		
	> 65	6.98	3.33	2.75	4.24	0.00	12.00	5.00	8.00	9.00		
Obtaining information concerning examinations and treatment	18–35	8.87	1.92	1.41	3.03	6.00	12.00	7.00	8.00	11.00	0.11	0.109
	36–50	9.66	2.35	2.01	2.83	2.00	12.00	8.00	10.00	12.00		
	51–65	9.57	2.51	2.19	2.94	3.00	12.00	8.00	10.00	12.00		
	> 65	10.07	2.29	1.89	2.91	4.00	12.00	8.00	11.00	12.00		

*M – mean; SD – standard deviation; CI – confidence interval; Min – minimum; Max – maximum; Me – median; Q25, Q75 – quartiles

Expectations from a family physician according to gender. Table 4 shows results concerning patients' expectations from a family physician according to gender.

Table 4 shows that females presented a higher level of expectations from a family physician with respect to an explanation of the disease – mean PRF score 9.72.

Statistical analysis demonstrates that the level of expectations concerning emotional support was higher among males – mean PRF score 7.03. They also more frequently expected information about examinations and treatment of hepatitis C – mean PRF score 9.91. The differences were insignificant.

Expectations from a family physician according to the place of residence. The collected research material was also analyzed from the aspect of expectations of patients infected with HCV from a family physician according to the place of residence (urban, rural) (Tab. 5)

The results of statistical analysis confirmed that urban inhabitants, to a higher degree than rural inhabitants, expected an explanation of the disease (9.83 scores vs. 9.33 scores), emotional support (7.12 scores vs. 6.51 scores), and wished to obtain information concerning examinations and treatment (9.77 scores vs. 9.42 scores) – according to the PRF scale. The relationships were insignificant.

Expectations from a family physician according to marital status. Patients with chronic hepatitis C were also analyzed according to their marital status (Tab. 6).

According to the data in Table 6, married males and married females presented a higher level of expectations from a family physician concerning an explanation of the disease and obtaining information about the disease and treatment – mean PRF score – 9.95 and 9.86, respectively.

Table 4. Patients' expectations according to the Patient Request Form (PRF), according to gender

Sub-scales:	Gender	M*	SD*	95% CI*		Min*	Max*	Q25*	Me*	Q75*	MWU (Z)	p
				Lower	Upper							
Expectation of explanation of the disease	male	9.61	2.16	1.91	2.50	4.00	12.00	9.00	10.00	11.00	0.48	0.628
	female	9.72	2.43	2.15	2.80	2.00	12.00	8.00	10.00	12.00		
Seeking emotional support	male	7.03	3.34	2.94	3.87	0.00	12.00	5.00	7.00	9.00	-0.49	0.626
	female	6.81	3.41	3.01	3.92	0.00	12.00	4.00	7.00	9.00		
Obtaining information concerning examinations and treatment	male	9.91	2.31	2.03	2.67	3.00	12.00	8.00	11.00	12.00	-1.36	0.174
	female	9.40	2.44	2.15	2.81	2.00	12.00	8.00	10.00	12.00		

**M – mean; SD – standard deviation; CI – confidence interval; Min – minimum; Max – maximum; Me – median; Q25, Q75 – quartiles.

Table 5. Patients' expectations according to the Patient Request Form (PRF) and place of residence

Sub-scales:	Place of residence	M*	SD*	95% CI*		Min*	Max*	Q25*	Me*	Q75*	MWU (Z)	p
				Lower	Upper							
Expectation of explanation of the disease	rural	9.33	2.48	2.13	2.97	4.00	12.00	8.00	10.00	12.00	-1.33	0.184
	urban	9.83	2.19	1.97	2.48	2.00	12.00	8.00	10.00	12.00		
Seeking emotional support	rural	6.51	3.12	2.68	3.73	0.00	12.00	4.00	6.00	8.00	-1.44	0.150
	urban	7.12	3.48	3.12	3.93	0.00	12.00	4.00	7.00	10.00		
Obtaining information concerning examinations and treatment	rural	9.42	2.43	2.09	2.91	3.00	12.00	8.00	10.00	12.00	-1.03	0.301
	urban	9.77	2.36	2.12	2.67	2.00	12.00	8.00	10.00	12.00		

*M – mean; SD – standard deviation; CI – confidence interval; Min – minimum; Max –maximum; Me – median; Q25, Q75 – quartiles

Table 6. Patients' expectations according to the Patient Request Form (PRF) according to marital status

Sub-scales:	Marital status	M*	SD*	95% CI*		Min*	Max*	Q25*	Me*	Q75*	KW (H)	p
				Lower	Upper							
Expectation of explanation of the disease	never married	8.81	2.66	2.16	3.47	2.00	12.00	7.00	10.00	10.50	8.67	0.070
	married	9.95	2.15	1.90	2.47	4.00	12.00	9.00	10.00	12.00		
	divorced	9.60	1.57	1.25	2.11	6.00	12.00	9.00	9.50	11.00		
	widowed	9.70	2.68	2.20	3.44	4.00	12.00	7.50	11.00	12.00		
Seeking emotional support	never married	6.56	3.26	2.65	4.26	0.00	12.00	4.00	6.50	8.00	0.87	0.928
	never married	6.95	3.48	3.07	4.01	0.00	12.00	4.00	7.00	10.00		
	divorced	7.40	2.80	2.23	3.76	2.00	12.00	6.00	7.00	9.00		
	widowed	6.80	3.60	2.95	4.63	0.00	12.00	4.00	7.00	9.00		
Obtaining information concerning examinations and treatment	never married	8.97	2.36	1.91	3.08	3.00	12.00	8.00	9.00	11.00	5.30	0.258
	married	9.86	2.25	1.99	2.59	4.00	12.00	8.00	10.00	12.00		
	divorced	9.63	2.68	2.14	3.61	2.00	12.00	8.00	11.00	12.00		
	widowed	9.70	2.50	2.05	3.21	4.00	12.00	8.00	10.50	12.00		

*M – mean; SD – standard deviation; CI – confidence interval; Min – minimum; Max –maximum; Me – median; Q25, Q75 – quartiles

Table 7. Patients' expectations according to the Patient Request Form (PRF) and level of education.

Sub-scales:	Level of education	M*	SD*	95% CI*		Min*	Max*	Q25*	Me*	Q75*	Spearman's R	p
				Lower	Upper							
Expectation of explanation of the disease	primary	9.00	2.81	2.14	4.10	4.00	12.00	7.00	10.00	11.00	0.12	0.039
	primary vocational	9.38	2.38	2.08	2.78	2.00	12.00	8.00	10.00	12.00		
	secondary school	10.04	2.20	1.89	2.63	4.00	12.00	9.00	10.00	12.00		
	higher	10.13	1.70	1.35	2.28	6.00	12.00	9.00	10.00	12.00		
Seeking emotional support	primary	8.30	2.77	2.11	4.05	2.00	12.00	6.50	8.00	10.50	-0.08	0.010
	primary vocational	6.65	3.42	3.00	3.99	0.00	12.00	4.00	6.00	9.00		
	secondary school	7.22	3.15	2.70	3.76	2.00	12.00	5.00	7.00	9.00		
	higher	6.03	3.72	2.96	5.00	0.00	12.00	3.00	6.50	9.00		
Obtaining information concerning examinations and treatment	primary	9.10	2.99	2.27	4.37	3.00	12.00	7.50	10.00	11.50	0.01	0.864
	primary vocational	9.67	2.34	2.05	2.73	4.00	12.00	8.00	10.00	12.00		
	secondary school	9.89	2.30	1.98	2.76	2.00	12.00	8.00	10.00	12.00		
	higher	9.37	2.30	1.83	3.09	4.00	12.00	8.00	10.00	12.00		

*M – mean; SD – standard deviation; CI – confidence interval; Min – minimum; Max –maximum; Me – median; Q25, Q75 – quartiles

Table 8. Patients' expectations according to the Patient Request Form (PRF) and occupational activity

Sub-scales:	Occupational activity	M*	SD*	95% CI*		Min*	Max*	Q25*	Me*	Q75*	MWU (Z)	p
				Lower	Upper							
Expectation of explanation of the disease	No	9.60	2.37	2.11	2.69	2.00	12.00	8.00	10.00	12.00	-0.42	0.675
	Yes	9.78	2.20	1.91	2.59	4.00	12.00	9.00	10.00	12.00		
Seeking emotional support	No	7.35	3.32	2.96	3.77	0.00	12.00	5.00	7.50	10.00	2.38	0.017
	Yes	6.25	3.36	2.92	3.96	0.00	12.00	3.00	6.00	8.00		
Obtaining information concerning examinations and treatment	No	9.89	2.40	2.14	2.73	2.00	12.00	8.00	11.00	12.00	2.19	0.029
	Yes	9.27	2.33	2.02	2.74	3.00	12.00	8.00	10.00	11.00		

*M – mean; SD – standard deviation; CI – confidence interval; Min – minimum; Max; -maximum; Me – median; Q25, Q75 – quartiles

It was found that the patients' who were divorced, to a higher degree expected emotional support – mean PRF score 7.40.

The study showed that according to the PRF scale the respondents in the category 'never married' (18.2%) to a lower degree expected an explanation of the disease from a family physician (8.81 scores), emotional support (6.56 scores), as well as obtaining information concerning examinations and treatment (6.80 scores), compared to those married or widowed. This relationship was insignificant.

Expectations from a family physician according to the level of education. Table 7 includes analysis of expectations of patients with hepatitis C from a family physician according to the level of education (Tab. 7).

It was observed that the higher the respondents' level of education, the significantly higher the level of their expectations from a family physician with respect to an explanation of the disease – 10.13 PRF scores (positive correlation coefficient R = 0.12; p<0.04).

Statistical analysis proved that patients with a primary level of education, to a higher degree expected emotional support – mean PRF score 8.30, whereas those with secondary school education more frequently expected to obtain information about examinations and treatment of hepatitis C – mean PRF score 9.89. The differences were insignificant.

Expectations from a family physician according to occupational activity. The scope of expectations of patients with hepatitis C was also analyzed according to their occupational activity. The results were analyzed using Mann-Whitney U test (Tab. 8).

It was found that the majority of patients infected with hepatitis C were not active occupationally (60.9%).

Statistical analysis demonstrated that the patients who were occupationally inactive to a significantly higher degree than those active expected emotional support (7.35 scores vs. 6.25 scores according to the PRF scale; p<0.02), and obtaining information concerning examinations and treatment (9.89 scores vs. 9.27 scores according to the PRF scale; p<0.03). In turn, occupationally active respondents, to a higher degree than those inactive, expected an explanation of the disease (9.78 scores vs. 9.60 scores according to the PRF scale). This relationship, however, was insignificant.

Expectations from a family physician according to the feeling of being a disabled person. The replies pertaining to the feeling of being a disabled person due to chronic hepatitis C according to their expectations from a family physician were analyzed using Mann-Whitney U test (Tab. 9).

The majority of patients did not consider themselves disabled because of infection with chronic hepatitis C (78.6%).

Statistical analysis confirmed that patients who felt disabled due to hepatitis C, to a significantly higher degree than those who considered themselves able-bodied, sought emotional support (7.73 vs. 6.70 according to the PRF scale; p<0.05), and expected obtaining information concerning examinations and treatment (10.62 vs. 9.40 according to the PRF scale;

Table 9. Patients' expectations according to the Patient Request Form (PRF) according to feeling disabled

Sub-scales:	Feeling disabled	M*	SD*	95% CI*		Min*	Max*	Q25*	Me*	Q75*	MWU (Z)	p
				Lower	Upper							
Expectation of explanation of the disease	No	9.51	2.44	2.20	2.73	2.00	12.00	8.00	10.00	12.00	-1.41	0.157
	Yes	10.29	1.55	1.28	1.95	6.00	12.00	9.00	10.00	12.00		
Seeking emotional support	No	6.70	3.54	3.20	3.95	0.00	12.00	4.00	6.50	9.00	-1.97	0.049
	Yes	7.73	2.50	2.07	3.16	2.00	12.00	7.00	8.00	9.00		
Obtaining information concerning examinations and treatment	No	9.40	2.43	2.20	2.72	2.00	12.00	8.00	10.00	12.00	-3.22	0.001
	Yes	10.62	1.93	1.60	2.44	5.00	12.00	10.00	12.00	12.00		

*M – mean; SD – standard deviation; CI – confidence interval; Min – minimum; Max. –maximum; Me – median; Q25, Q75 – quartiles

p<0.001). Patients who felt disabled, compared to those who considered themselves able-bodied, expected an explanation of the disease (10.29 scores vs. 9.51 scores according to the PRF scale). The relationship was insignificant – p>0.05.

Expectations of patients infected with HCV from a family physician were also analyzed according to self-reported state of health. The following assessment categories were adopted: very poor, poor, mediocre, good, and very good.

Expectations from a family physician according to self-reported state of health. The results concerning self-assessment of the state of health by patients with hepatitis C according to the mean PRF score were analyzed using the Spearman's rank correlation (Tab. 10, Fig. 3).

The data in Table 10 demonstrate that the highest level of expectations from a general practitioner was observed among patients with mediocre state of health in three PRF sub-scales: an explanation of the disease – mean score 9.79; emotional support – mean score 7.11; and obtaining information concerning examinations and treatment – mean score 9.86. It was found that the higher the self-reported state of health, the lower the level of expectations with respect to emotional support – mean PRF score 6.75. The differences were insignificant.

Patients' expectations according to the Patient Request Form (PRF) and according to diet ordered by the physician. While analyzing the collected research material the answers were also investigated concerning the diet ordered after the diagnosis of hepatitis C (Tab. 11).

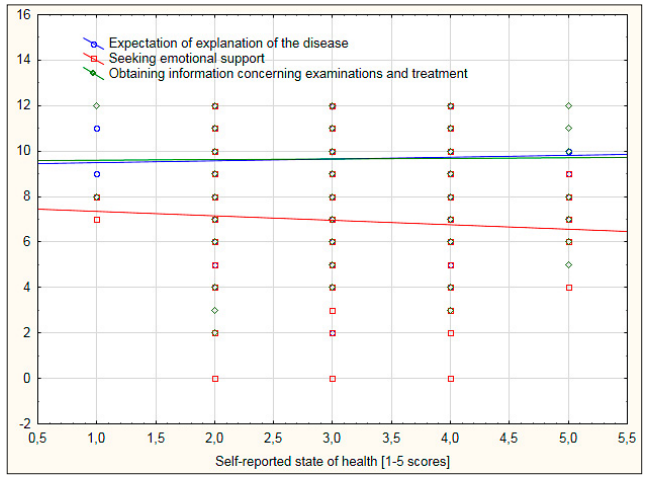

Figure 3. Distribution of results of patients' expectations according to the PRF scale by self-reported health

Patients who were ordered a special diet by the physician after diagnosis of hepatitis C, to a higher degree expected emotional support – mean PRF score 7.23, compared to patients who did not receive dietary recommendations – mean PRF score 6.39. The differences, however, were insignificant.

Table 10. Patients' expectations according to the Patient Request Form (PRF) according to self-reported state of health

Subscales:	Self-reported health	M*	SD*	95% CI*		Min*	Max*	Q25*	Me*	Q75*	Spear-man's R	p
				Lower	Upper							
Expectation of explanation of the disease	very poor + poor	9.20	2.80	2.23	3.76	4.00	12.00	7.00	10.00	12.00	-0.01	0.898
	mediocre	9.79	2.24	1.98	2.59	2.00	12.00	9.00	10.00	12.00		
	good	9.76	2.26	1.93	2.71	4.00	12.00	8.00	10.00	12.00		
	very good	9.00	1.07	0.71	2.18	7.00	10.00	8.50	9.00	10.00		
Seeking emotional support	very poor + poor	6.97	3.05	2.43	4.09	0.00	12.00	5.00	7.00	8.00	-0.06	0.395
	mediocre	7.11	3.60	3.18	4.15	0.00	12.00	4.00	8.00	10.00		
	good	6.61	3.31	2.84	3.97	0.00	12.00	4.00	6.00	9.00		
	very good	6.75	1.49	0.98	3.03	4.00	9.00	6.00	7.00	7.50		
Obtaining information concerning examinations and treatment	very poor + poor	9.03	3.19	2.54	4.29	2.00	12.00	6.00	10.00	12.00	-0.02	0.750
	mediocre	9.86	2.20	1.95	2.54	4.00	12.00	8.00	10.00	12.00		
	good	9.69	2.21	1.90	2.65	3.00	12.00	8.00	10.00	12.00		
	very good	8.75	2.60	1.72	5.30	5.00	12.00	6.50	9.00	11.00		

*M – mean, SD – standard deviation, CI – confidence interval, Min. – minimum, Max. -maximum, Me – median, Q25, Q75 – quartiles

Table 11. Patients' expectations according to the Patient Request Form (PRF) and the diet ordered by the physician

Subscales:	Diet ordered by a physician after diagnosis of hepatitis C	M*	SD*	95% CI*		Min*	Max*	Q25*	Me*	Q75*	MWU (Z)	p
				Lower	Upper							
Expectation of explanation of the disease	No	9.66	2.20	1.91	2.61	4.00	12.00	9.00	10.00	12.00	-0.27	0.785
	Yes	9.67	2.36	2.11	2.68	2.00	12.00	8.00	10.00	12.00		
Seeking emotional support	No	6.39	3.66	3.17	4.33	0.00	12.00	3.00	6.00	9.00	-1.81	0.070
	Yes	7.23	3.16	2.82	3.59	0.00	12.00	5.00	7.00	9.00		
Obtaining information concerning examinations and treatment	No	9.66	2.22	1.92	2.62	4.00	12.00	8.00	10.00	12.00	-0.24	0.813
	Yes	9.64	2.48	2.22	2.82	2.00	12.00	8.00	10.00	12.00		

*M – mean; SD – standard deviation; CI – confidence interval; Min – minimum; Max – maximum; Me – median; Q25, Q75 – quartiles

DISCUSSION

In Poland, hepatitis C is a serious epidemiological problem because the HCV virus may cause acute, as well as chronic infections of various intensity. Recently, great progress has been observed in the diagnostics and treatment of patients infected with HCV, provided that it is detected early.

According to the opinion of Lee, in the situation of late diagnosis of chronic hepatitis C, 15–30% of patients develop cirrhosis of the liver and are at risk of hepatocellular carcinoma [17]. Patients with hepatitis C are obliged to use primary health care in the local environment in which general practitioners play a key role in the care of chronically ill patients. They provide information concerning the essence of the disease, guide diagnostics and treatment, and are an important link in the provision of emotional support. Simultaneously, patients expect a high level of provision of services.

Cardoso et al. and Cossais et al. dealt with the quality of life of patients infected with HCV [18, 19], but found no results pertaining to the expectations of patients from family physicians who take care of patients with hepatitis C. Own study showed that adults infected with HCV most often expected from a family physician an explanation of the disease (9.67 scores), and obtaining information concerning examinations and treatment (9.65 scores). In addition, to a low degree the respondents expected emotional support from the physician (6.92 scores).

According to Polish researchers, more than a half of study participants (58%) counted on emotional support from primary care physicians, and these were mainly older patients [20]. Strzelecka et al. confirmed these expectations from general practitioners. In the subject literature, there are reports by Cardoso et al. and Cossais et al. concerning the quality of life of patients infected with HCV [21]; however, no results were found pertaining to the expectations of patients from family physicians who take care of patients with hepatitis C. Own study showed that adults infected with HCV most often expected from a family physician an explanation of the disease (9.67 scores), and obtaining information concerning examinations and treatment (9.65 scores). In addition, the patients to a low degree expected emotional support from the physician (6.92 scores).

Information obtained and emotional support increased with age, compared to younger patients [22]. The presented study showed that the older the patients, the higher the degree to which they expected from a family physician the obtaining information about examinations and treatment (R=0.11) and emotional support (R=0.06) in chronic hepatitis C (p>0.05).

Wierzbińska-Karakuła et al. observed that females were more satisfied with information obtained from a primary health care physician, compared to males [23]. The results showed that females presented a higher level of expectations from a family physician concerning an explanation of the disease (9.72 scores). Males, to a higher degree expected emotional support (7.03 scores), and more frequently expected information about examinations and treatment in hepatitis C (9.91 scores; p>0.05).

Studies carried out in Poland by *Humeniuk et al.* demonstrated that rural inhabitants more often expected emotional support from a primary health care physician (family physician) [24]. The results of statistical analysis confirmed that urban inhabitants, to a higher degree than rural inhabitants, expected an explanation of the disease (9.83 scores vs. 9.33 scores), emotional support (7.12 scores vs. 6.51 scores), and wished to obtain information concerning examinations and treatment (9.77 scores vs. 9.42 scores) – according to the PRF scale. The relationships were insignificant.

According to Cardoso and Silva in Portugal, patients who are widowed showed a significantly higher degree of seeking emotional support from a primary health care physician [25]. The presented study demonstrated that married males and females presented a higher level of expectations from a family physician concerning an explanation of the disease, and obtaining information about the disease and treatment – mean score 9.95 and 9.86, respectively. Patients who were divorced expected more emotional support (7.40 scores). Simultaneously, it was observed that patients who were never married, to a lower degree expected from a family physician an explanation of the disease (8.81 scores), emotional support (6.56 scores), and obtaining information concerning examinations and treatment (6.80 scores) than patients who were married or divorced/widowed (p>0.05).

According to the opinion of Barreira et al., patients with a lower level of education significantly more often expect emotional support during a visit to a family physician [26]. Own study showed that the higher the patients' level of education, the significantly higher degree of their expectations from a general practitioner with respect to an explanation of the disease – 10.13 scores (R = 0.12; p<0.04). In turn, respondents with primary education, to a higher degree expected emotional support (8.30 scores), while those with secondary school education more often expected information concerning examinations and treatment of hepatitis C (9.89 scores; p>0.05).

Two teams of Polish researchers, Wołosewicz et al. and Rotter et al., confirmed that deterioration of the quality of life of patients infected with HCV is often due to low productivity at work, loss of employment, and difficulties in performing social roles [27, 28]. It was found that the majority of patients infected with hepatitis C virus were occupationally inactive (60.9%), and to a significantly higher degree than those active, expected emotional support (7.35 scores vs. 6.25 scores; $p<0.02$), and obtaining information concerning examinations and treatment (9.89 scores vs. 9.27 scores; $p<0.03$). In turn, occupationally active patients, to a higher degree expected an explanation of the disease (9.78 scores vs. 9.60 scores; $p>0.05$.

A team of Polish researchers, Wierzbińska-Karakuła et al. found that persons who are less fit because of age have expectations from a family physician concerning the information obtained [23]. The presented study showed that respondents who felt disabled due to hepatitis C, to a significantly higher degree than those who considered themselves able-bodied, sought emotional support (7.73 vs. 6.70), and expected obtaining information about examinations and treatment (10.62 vs. 9.40; $p<0.001$). Patients who considered themselves disabled, compared to those who felt able-bodied, expected an explanation of the disease (10.29 scores vs. 9.51 scores); $p>0.05$. In addition, based on own research, it was observed that patients with a mediocre state of health presented the highest degree of expectations from a general practitioner in three PRF subscales: with respect to an explanation of the disease (9.79 scores), emotional support (7.11 scores), obtaining information concerning examinations and treatment (9.86 scores). It was found that the higher the level of self-reported health, the lower the degree of expectations of emotional support (mean score 6.75; $p>0.05$).

According to Johnson et al., anti-health eating habits hinder the process of treatment. The lack of observance of diet and malnutrition of patients with cirrhosis of the liver significantly deteriorate the clinical status of this organ [29]. It was observed that patients who were ordered a special diet after the diagnosis of hepatitis C, to a higher degree expected emotional support (7.23 scores), compared to those who did not receive dietary recommendations (6.39 scores; $p>0.05$).

CONCLUSIONS

1) According to the PRF scale, patients with hepatitis C, to the highest degree expected from a first contact family physician an explanation of the disease and obtaining information concerning examinations and treatment, whereas the smallest group of patients expected emotional support.
2) No significant relationships were found between expectations of patients with hepatitis C from a family physician according to: age, gender, place of residence, marital status, self-reported health, and the diet ordered.
3) Patients with higher education, to a significantly higher degree expected from a family physician an explanation of the disease, compared to respondents with other levels of education.
4) Patients who were occupationally inactive, to a significantly higher degree than those active expected emotional support and obtaining information concerning examinations and treatment.
5) Patients who due to hepatitis C felt disabled, to a significantly higher degree than those who considered themselves able-bodied, expected from a family physician emotional support and obtaining information concerning examinations and treatment.
6) The results of the study confirm the need for improvement of the quality of provision of medical services for patients with hepatitis C by family physicians with respect to the explanation of the essence of the disease, provision of information concerning examinations and further treatment, as well as emotional support during visits.

REFERENCES

1. Mohamoud Y, Mumtaz GR, Riome S, et al. The epidemiology of hepatitis C virus infection in Egypt: a systematic review and data synthesis. BMC Infect Dis. 2013;13:288. https://doi.org/10.1186/1471-2334-13-288
2. Mei X, Lu H. Prevalence, diagnosis, and treatment of hepatitis C in Mainland China. Glob Health Med. 2022;3(5):270–275. https://doi.org/10.35772/ghm.2021.01080
3. Kamili S, Drobeniuc J, Araujo AC, et al. Laboratory diagnostics for hepatitis C virus infection. Clin Infect Dis. 2012;55(1):43–48. https://doi.org/10.1093/cid/cis368
4. Saadi T, Khoury J. Is there a relationship between treatment with direct antiviral agents for HCV infection and the development of malignancies? J Clin Gastroenterol. 2018;52(4):353–359. https://doi.org/10.1097/MCG.0000000000000853
5. Dunvan JD, Urbanowicz RA, Tarra AW, et al. Hepatitis C virus vaccine design: focus on the humoral. Vaccines. 2020;8(1):E90. https://doi.org/10.3390/vaccines 8010090
6. Yang JD, Roberts LR. Hepatocellular carcinoma: a global view. Nat Rev Gastroenterol Hepatol. 2010;7(8):448–458. https://doi.org/10.1038/nrgastro.2010.100
7. Halota W, Flisiak R, Juszczyk J, editor. Rekomendacje Polskiej Grupy Ekspertów HCV dotyczące leczenia wirusowych zapaleń wątroby typu C w roku 2018. Hepatol. 2018;18:1–9. https://doi.org/10.5114/hepatologia.2018.75974
8. Sierpińska L, Jaworski S. Hepatocellular carcinoma in patients with chronic hepatitis C – case study. J Educ Health Sport. 2022;12(3):229–237. https://doi.org/10.12775/JEHS.2022.12.03.019
9. Zakrzewska K, Stępień M, Rosińska M. Hepatitis C (hepatitis C) in Poland in 2017. Epidemiol Rev. 2019;73(2):167–178. https://doi.org/10.32394/pe.73.16
10. Sakem S, Madaliński K, Nydegger U, et al. Hepatitis C virus epidemiology and prevention in Polish and Swiss population – similar and contrasting experiences. Ann Agric Environ Med. 2016;23(3):425–431. https://doi.org/10.5604/12321966.1219181
11. Garozzo A, Falzone L, Rapisarda V, et al. The risk of HCV infection among health-care workers and its association with extrahepatic manifestations (Review). Mol Med Rep. 2017;15:3336–3339. https://doi.org/10.3892/mmr.2017.6378
12. Sierpińska L. Risk of hepatitis C virus infection among health care workers in their occupational practice. J Educ Health Sport. 2017;7(8):150–161. https://doi.org/10.5281/zenodo.844147
13. Omar HGA, Qayed MH, Khalek EMA, et al. Egyptian J Comm Med. 2022;40(3):156–163. https://doi.org/10.21608/ejcm.2021.86749.1184
14. Atław D, Sahiledengle B, Tariku Z. Hepatitis B and C virus infection among healthcare workers in Africa: a systematic review and meta-analysis. Environ Health Prev Med. 2021;26(1):2861. https://doi.org/10.1186/s12199-021-00983-9
15. Halota W, Flisiak R, Juszczyk J, et al. Recommendations by Polish Group of Experts for HCV for the treatment of viral hepatitis C in 2018. Hepatol. 2018;18:1–9. https://doi.org/10.5114/hepatologia.2018.75974
16. Rhodes MA, Humphrey M. Implementation of a hepatitis C treatment program into a primary care residency linic. PRiMER. 2021;5:1. https://doi.org/10.22454/PRiMER.2021.532368
17. Lee MH. Risk of hepatocellular carcinoma for patients treated with direct-acting antivirals: steps after hepatitis C virus eradication to achieve elimination. Transl Gastroenterol Hepatol. 2018;3:15. https://doi.org/10.21037/tgh.2018.02.03
18. Juczyński Z. Measurement tools in health promotion and psychology. Warsaw: Eds Psychological Test Laboratory of the PPA; 2001, PL. pp. 143–148.

19. Cardoso H, Silva M. Health-Related Quality of Life in Chronic Hepatitis C. GE Port. 2017;24(2):55–57. https://doi.org/10.1159/000453319
20. Cossais S, Schwarzinger M, Pola S, et al. Quality of life in patients with chronic hepatitis C infection: Severe comorbidities and disease perception matter more than liver-disease stage, PLoS One 2019;14(5):article e0215596. https://doi.org/10.1371/journal.pone.0215596
21. Robaszkiewicz-Bouakaz R, Gawrońska K, Jurczak A, et al. Outpatient care expectations health among people deprived of liberty. Med Health Sci Rev. 2015;1(1):27–33.
22. Strzelecka A, Nowak-Staż G, Karakiewicz B. Expectations of patients towards a primary care physician, related to the reason for the current visit, with particular emphasis on patients aged 65+. Fam Med Primary Care Rev. 2015;17(3):2015–2018. https://doi.org/10.5114/fmpcr/58601
23. Wierzbińska-Karakuła S, Binkowska-Bury M, Burzyńska J, et al. Respecting the rights and patient expectations as a part of the quality of health services in the Podkarpacie primary health care units. Med Rev. 2015;1:19–30.
24. Humeniuk E, Pawlikowska-Łagód K, Dąbska O, et al. Expectations of patients from eastern Poland relative to the primary health care doctors. Polish Nursing. 2018;2(68):158–164. https://doi.org/10.20883/pielpol.2018.19
25. Cardoso H, Silva M. Health-related quality of life in chronic hepatitis C. GE Port J Gastroenterol. 2017;24(2):55–57. https://doi.org/10.1159/000453319
26. Barreira DP, Marinho RT, Bicho R, et al. Ouakinin SRS. Psychosocial and neurocognitive factors associated with hepatitis C – implications for future health and wellbeing. Front Psychol. 2018;9(2666):1–6. https://doi.org/10.3389/fpsyg. 2018.02666
27. Wołosewicz I, Kupcewicz E, Szypulska A, et al. Patients' expectations towards a doctor and a nurse in primary health care. Entrepreneurship and Management. 2013;XIV(10):293–322.
28. Rotter I, Stańczak K, Laszczyńska M, et al. Expectations of emotional support of primary care patients depending on selected demographic factors. Fam Med Primary Care Rev. 2013;15(3):381–3.
29. Faccioli J. Nardelli S, Gioia S, et al. Nutrition Assessment and Management in Patients with Cirrhosis and Cognitive Impairment: A Comprehensive Review of Literature. J Clin Med. 2022;11(10):2842. https://doi.org/10.3390/jcm11102842