



## Stigmatization and discrimination of patients with chronic hepatitis C

### Stigmatizacija i diskriminacija obolelih od hroničnog hepatitisa C

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#### Abstract

**Background/Aim.** Chronic hepatitis C (CHC) is often associated with injectable drug users and human immunodeficiency virus coinfection for which there is stigmatization in society. The aim of this study was to identify the presence of stigma and discrimination of patients with CHC, as well as the influence of sociodemographic factors on the occurrence of stigmatization. **Methods.** A cross-sectional study was performed. Patients with CHC and conducted antiviral therapy completed an anonymous structured questionnaire consisting of sociodemographic questions and Hepatitis C stigma scale. **Results.** Out of 154 patients 61.7% were male and 72.1% from the city; 59.7% have completed secondary school; 61.7% were employed before the disease while 31.8% after the disease; 45.5% were unsatisfactory with financial situation; 54.5% were married; 37.7% lived with a spouse and children; 86.4% in their own house/apartment; 5.2% of the patients were abandoned by their partners, while 35.7% consumed drugs. A statistical significance of the stigma score was found in those who lived in the city ( $p = 0.018$ ), unmarried ( $p = 0.005$ ), abandoned by the partners after the diagnosis of CHC ( $p < 0.001$ ), drug users ( $p = 0.002$ ) and those living with parents ( $p = 0.034$ ). Univariate regression analysis singled out as significant: residence ( $p = 0.018$ ), living with their parents ( $p = 0.046$ ), abandonment by a partner ( $p < 0.001$ ) and drug use ( $p = 0.002$ ). A multivariate regression model of independent variables singled out abandonment by partners (Beta = 5.158,  $p = 0.007$ ). Men disagree significantly with the two elements inside stigma [not the same as the others ( $p = 0.035$ )] and hurt by the reaction of others ( $p = 0.047$ ). **Conclusion.** The presence of stigma in patients with CHC was proven. The results indicate the need to strengthen anti-stigma programs that will reduce their psychological and social problems and reduce stigmatization in society.

#### Key words:

hepatitis c; hepatitis, chronic; social stigma; socioeconomic factors; surveys and questionnaires.

#### Apstrakt

**Uvod/Cilj.** Hronični hepatitis C (HHC) često se povezuje sa korisnicima droga koji ih injektiraju i sa koinfekcijom virusom humane imunodeficijencije kod kojih postoji stigmatizacija u društvu. Cilj ove studije bio je da se identifikuje prisustvo stigmatizacije i diskriminacije obolelih od HHC, i ispita uticaj sociodemografskih faktora na pojavu stigmatizacije. **Metode.** Ova studija preseka obuhvatila je ispitanike sa HHC i sprovedenom antivirusnom terapijom koji su anonimno popunjavali strukturisani upitnik sastavljen od sociodemografskih pitanja i hepatitis C stigma skale. **Rezultati.** Od ukupno 154 ispitanika, 61,7% bilo je muškog pola, 72,1% iz grada, 59,7% sa srednjom školom, 61,7% radilo je pre bolesti, a posle 31,8%, 45,5% je bio nezadovoljavajućeg materijalnog stanja, 54,5% oženjeno/udato, u zajednici sa supružnikom i decom 37,7%, u sopstvenoj kući/stanu 86,4%. Partner je napustio 5,2% obolelih, dok je drogu konzumiralo 35,7% ispitanika. Statistička značajnost stigma skora nađena je kod bolesnika koji su živeli u gradu ( $p = 0,018$ ), neoženjenih/neudatih ( $p = 0,005$ ), ostavljenih od strane partnera posle dijagnostikovanja HHC ( $p < 0,001$ ), korisnika droga ( $p = 0,002$ ) i onih koji su živeli sa roditeljima ( $p = 0,034$ ). Univarijantnom regresionom analizom izdvojeni su, kao statistički značajni: prebivalište ( $p = 0,018$ ), život sa roditeljima ( $p = 0,046$ ), napuštanje od strane partnera ( $p < 0,001$ ) i upotreba droge ( $p = 0,002$ ). Multivarijantnim regresionim modelom nezavisnih varijabli, kao značajno izdvojeno je napuštanje od strane partnera (Beta = 5,158,  $p = 0,007$ ). Muškarci se značajno nisu slagali sa dva elementa unutrašnje stigme (nije isti kao drugi –  $p = 0,035$  i povređeni reakcijom drugih –  $p = 0,047$ ). **Zaključak.** Utvrđeno je prisustvo stigmatizacije kod obolelih od HHC. Rezultati ukazuju na potrebu jačanja antistigma programa koji će umanjiti psihičke i socijalne probleme kod obolelih od HHC i sniziti njihovu stigmatizaciju u društvu.

#### Ključne reči:

hepatitis c; hepatitis, hronični; socijalna stigma; socioekonomski faktori; ankete i upitnici.

## Introduction

Stigmatization of patients is often associated with a fear of chronic diseases: the fear of the disease, the fear that they will infect others and the fear of death. Stigmatization is attributing traits that significantly discredit a person in the eyes of others. In the beginning, it indicated stamping unfit person. Now it is commonly used in the context of social alienation from the people with discrediting condition or disease, which further helps reduce the chances of life by limiting access to employment, education, housing, income, health care, etc.<sup>1</sup>. The influence of stigma leads to different social interactions<sup>2</sup>. According to data from the literature, the most stigmatized are those suffering from mental illness, AIDS, chronic hepatitis C (CHC), tuberculosis and others<sup>3-8</sup>. The reaction is not only to the symptoms of the disease but also to the opinion that the society has about the disease. People avoid the infected ones because of the ignorance of the ways of transmission, especially blood transmitted infections such as human immunodeficiency virus (HIV) and hepatitis C virus (HCV), partly because of the fears of contagion, or their negative attitudes and socially accepted view that only people with high-risk behavior usually get sick with these diseases, so the society has little understanding and marginalizes them. As a result, patients avoid social gatherings, isolate themselves, lose self-esteem and fall into depression<sup>9-11</sup>. Sometimes the stigma and discrimination of patients happens in the health institution, usually in the hospital, general practice and dental practice<sup>12</sup>. There is a rejection of the provision of health services, stigma when providing services or violation of confidentiality.

The aim of this study was to identify the presence of stigma and discrimination of patients with CHC and explore the impact of sociodemographic factors on the occurrence of stigmatization.

## Methods

This-cross sectional study was performed in the period from January 1 to March 31, 2015. Consecutive, ambulatory and hospitalized patients (154 patients of both sexes) of the Clinic for Infectious Diseases, Clinical Centre Niš, Serbia, diagnosed with CHC were interviewed and included in the study. All the patients were informed about the research objectives in details. All data were collected anonymously by voluntary filling in the questionnaire by the patients in the presence of the interviewer. The approval of the Ethics Committee of the Clinical Centre Niš (No. 338/41 of 13 January 2015) and the Public Health Institute Niš (No. 07-4693 from December 26, 2014) was obtained.

The criterion for inclusion in the study was the diagnosis of CHC by the infectologist and treatment of patients of both sexes aged over 18 years by antiviral therapy. All criteria for the diagnosis and treatment are implemented by the infectologist.

The criteria by which people were not included: aged under 18, people who at the time of testing or previously were serving a prison sentence, psychiatric patients and patients with dementia, pregnant women, hemodialysis patients

with a contraindication to receiving ribavirin, ignorance of Serbian language and not accepting participation in the study.

By using a structured questionnaire designed for this study following parameters were examined: socio-demographic characteristics (age, sex, place of residence, education level, employment status, financial status, marital status, number of household members), the time elapsed from the time of diagnosis to the initiation therapy and characteristics of behavior (use of psychoactive substances). To determine the level of stigmatization HCV stigma scale was used. The self-administered questionnaires were used.

The hepatitis C stigma scale is a questionnaire that is derived from the original HIV stigma scale with 40 questions<sup>13</sup>. A short form with 10 questions was adapted by Wright et al.<sup>14</sup>. The edited version contains minimum two questions from the following subscales: personalized stigma (consequences of knowing the status of the patient), concerns about the disclosure of the diseases, negative self-image: shame, guilt, not as good as others) and 4 concern over public attitudes. The scale has been adapted for patients with other health disorders (lung cancer) and population groups, as well. The scale was shortened for 1 question (factor disclosure in Berger scale), because it reduces the scale validity and reliability<sup>15,16</sup>. HCV stigma scale with 9 questions enables to see the connection with depression and mental health. Tests have shown that the maximum scores of stigmatization are associated with depression and mental health. Answers are ranked from 1 to 4 (with modalities: I strongly disagree – 1, I disagree – 2, I agree – 3, I strongly agree – 4), with the total score that ranges from 9 to 36. Maximum score is the greatest stigmatization.

## Statistical analysis

From the basic descriptive statistical parameters, the following standard statistical methods for qualitative and quantitative assessment of the results were used: absolute numbers, relative numbers (%), arithmetic mean ( $\bar{x}$ ) and standard deviation (SD). The normality of the distribution of individual values was investigated with Kolmogorov Smirnov test. Comparing the arithmetic mean of the two sample was performed by *t*-test while, in cases of improper distribution of data, nonparametric Mann-Whitney *U* test was used. For the purpose of comparing the value of the test characteristics among several samples ANOVA was used (i.e. the Kruskal-Wallis test in cases of irregular distribution), where for the *post hoc* analysis, i.e. for the analysis of the values between two sample, the Bonferroni test was used. To test the statistical significance of the difference of absolute frequencies between samples,  $\chi^2$  test was used. For the correlation analysis Pearson's linear correlation coefficient was used. In order to determine predictors stigma score multivariate regression analysis was used. Statistical hypothesis was tested at the level of significance for the risk of  $\alpha = 0.05$ , i.e. the difference between the samples was considered significant if  $p < 0.05$ .

## Results

Table 1 shows the descriptive characteristics of the patients. There were more male subjects, 95 (61.7%); the average age of the patients was  $46.81 \pm 13.86$  (range 22–75 years); the city as residence had 111 (72.1%) patients. The highest percentage of subjects had secondary education (59.7%), followed by completed college and university 27 (17.5%), basic 25 (16.2%), while there was the smallest number of those without school 10

(6.5%). A higher percentage of patients at the time of morbidity was employed (61.7%), while 31.8% were currently working. Only one (0.65%) health worker was registered among respondents with the diagnosis of CHC. More than half (51.3%) of the subjects believed themselves satisfactory, 45.5% poor, while 3.2% were in excellent financial situation. The largest number of the patients were married, 84 (54.5%), and living with a spouse and children, 58 (37.7%). Also, most of them were living in their own house / flat, 133 (86.4%).

**Table 1**  
**Baseline descriptive characteristics of the patients with the diagnosis of hepatitis C infection**

Characteristics	Patients, n (%)
Gender	
male	95 (61.7)
female	59 (38.3)
Residence	
city	111 (72.1)
village	43 (27.9)
Level of education	
incomplete primary	10 (6.5)
primary	25 (16.2)
secondary	92 (59.7)
college and university	27 (17.5)
Employment status at the time of morbidity	
unemployed	59 (38.3)
employed	95 (61.7)
Current employment status	
unemployed	105 (68.2)
employed	49 (31.8)
Financial state	
poor	70 (45.5)
satisfactory	79 (51.3)
excellent	5 (3.2)
Marital status	
not married	42 (27.3)
married	84 (54.5)
cohabitation	4 (2.6)
divorced	16 (10.4)
a widower / widow	8 (5.2)
Abandonment by the partners after the diagnosis of hepatitis C	
no	146 (94.8)
yes	8 (5.2)
Life in your house / flat	
no	21 (13.6)
yes	133 (86.4)
Family status	
lives alone	13 (8.4)
lives with a spouse	28 (18.2)
lives with a spouse and children	58 (37.7)
lives with children	12 (7.8)
lives with his parents	43 (27.9)
The use of psychoactive substances before morbidity	
no	99 (64.3)
yes	55 (35.7)
The use of heroin before morbidity	48 (31.17)
Current use of psychoactive substances	
no	149 (96.8)
yes	5 (3.2)
On cessation therapy	6 (3.9)

A total of 8 (5.2%) patients were left by their partners after learning they had hepatitis C. Psychoactive substances were consumed by 55 (35.7%) patients before learning they had the disease, mostly heroin (31.17%). Currently, 6 (3.9%) patients were on cessation therapy.

The average age of the patients at the time of the morbidity was  $39.92 \pm 14.67$  years, with the average age at the time of initiation of symptomatic treatment  $37.13 \pm 13.38$

years, and at the time of starting therapy with interferon and ribavirin  $43.36 \pm 13.59$  years (Table 2).

In this study, only in two (1.3%) male patients the highest stigma scores (34 or all 36) were found, while 6 (3.90%) patients had the lowest score – 9, i.e. these patients did not have any form of stigmatization.

Table 3 shows that the patients who lived in the city ( $p = 0.018$ ) had higher values of stigma score. There was a

Table 2

Period of the disease	Age (years)
	$\bar{x} \pm SD$ ; Med (min–max)
At the time of the study	$46.81 \pm 13.86$ ; 44.5 (22–75)
At the time of commencement symptomatic therapy	$37.13 \pm 13.38$ ; 34,00 (13–66)
At the time of commencement therapy with interferon and ribavirin	$43.36 \pm 13.59$ ; 41.00 (14–73)

$\bar{x}$  – mean value; SD – standard deviation; Med – median.

Table 3

Values of stigma score according to certain sociodemographic factors			
Variables	Stigma score ( $\bar{x} \pm SD$ )	t/F*	p
Gender			
male	$18.44 \pm 5.27$	0.874	0.774
female	$19.19 \pm 4.91$		
Residence			
city	$19.33 \pm 5.15$	2.389	0.018
village	$17.16 \pm 4.81$		
Educational attainment			
no education	$19.00 \pm 5.89$		
primary	$16.68 \pm 4.98$	2.284*	0.081
secondary	$19.49 \pm 5.16$		
college and university	$17.93 \pm 4.51$		
Current employment status			
unemployed	$19.01 \pm 5.25$	0.998	0.887
employed	$18.12 \pm 4.87$		
Financial state			
poor	$19.13 \pm 5.39$	0.713	0.492
satisfactory	$18.51 \pm 4.99$		
excellent	$16.60 \pm 3.51$		
Marital status			
not married <sup>a</sup>	$20.74 \pm 5.73$		
married	$17.39 \pm 4.75$	3.654*	0.007
cohabitation	$18.00 \pm 2.58$		
divorced	$20.00 \pm 4.71$		
a widower / widow	$20.00 \pm 3.85$		
Leaving from a partner			
no	$18.38 \pm 4.92$	3.692	< 0.001
yes	$25.00 \pm 5.18$		
Family status			
lives alone	$20.23 \pm 1.55$		
lives with a spouse <sup>b</sup>	$17.43 \pm 4.81$	3.239*	0.014
lives with a spouse and children	$17.45 \pm 4.71$		
lives with children	$20.17 \pm 4.04$		
lives with parents	$20.44 \pm 5.46$		
The use of psychoactive substances before morbidity			
no	$17.79 \pm 4.61$	3.132	0.002
yes	$20.42 \pm 5.63$		

\*ANOVA; <sup>a</sup> (single vs married,  $p = 0.005$ ); <sup>b</sup> (spouse and children vs parents,  $p = 0.034$ ).

statistically significant difference in the stigma score in relation to marital status ( $p = 0.007$ ). It was observed that the unmarried subjects had a greater stigma score than the married subjects ( $20.74 \pm 5.73$  vs  $17.39 \pm 4.75$ ,  $p = 0.007$ ).

The subjects abandoned by the partners after learning about the disease had a significantly higher stigma score than those who were not abandoned ( $25.00 \pm 5.18$  vs  $18.38 \pm 4.92$ ,  $p < 0.001$ ).

In relation to who subjects lived with, a statistically significant difference was observed ( $p = 0.14$ ). Further analysis found that people who lived with their parents had significantly higher scores compared to those living with a spouse and children ( $20.44 \pm 5.46$  vs  $17.45 \pm 4.71$ ,  $p = 0.034$ ).

The subjects who used drugs prior to the diagnosis of hepatitis C had a significantly higher stigma score compared to those who did not consumed drugs ( $20.42 \pm 5.63$  vs  $17.79 \pm 4.61$ ,  $p = 0.002$ ).

Univariate regression analysis was conducted to evaluate the effect of some independent factors to the values of stigma score. As statistically significant were singled out: residence ( $p = 0.018$ ), the person the subjects lived with ( $p = 0.046$ ), abandonment by a partner ( $p < 0.001$ ) and the use of psychoactive substances before the diagnosis of hepatitis C ( $p = 0.002$ ) (Table 4).

The method of standard multiple regression analysis was performed to examine the place of residence, the person the subjects lived with, abandonment by the partners, drug use before morbidity and marital status on the value of the stigma score. The tested model explains 12.80% of the variance of stigma score (adjusted  $R^2 = 0.098$ ,  $F = 4.326$ ,  $p = 0.001$ ). Only abandonment by partners was allocated as an independent risk factor (Beta = 5.158,  $p = 0.007$ ) (Table 5).

To the question (Table 6) whether they feel not the same as others because of hepatitis C, a statistically

significant difference was found in the responses between men and women. A significantly more men disagreed with this statement ( $\chi^2 = 4.4288$ ,  $p = 0.035$ ).

No statistically significant differences were found in the responses to gender questions: whether they felt dirty, whether they had the feeling of being a bad person, whether they believed people with hepatitis C repulsive, whether they stopped to socialize with some people because of their reactions, whether they had lost friends after the announcement of hepatitis C, whether they worried about what others would say about their disease. When asked whether they were hurt by the reaction of others to their hepatitis C, the statistically significant differences in the responses in relation to sex was found. Significantly more men disagreed with this statement ( $\chi^2 = 3.391$ ,  $p = 0.047$ ).

## Discussion

This study examined the presence of stigma and discrimination of patients with CHC, as well as the influence of some sociodemographic factors on the presence of stigma. Stigmatization and some sociodemographic factors, such as marital status, abandonment by partners after finding that the subject got infected by hepatitis C, drug users and living with parents, were found as significantly influential. The patients suffered from distortion of mental health<sup>17</sup>, lowering of self-esteem, fear of disclosing a positive HCV status, even to health care workers and, consequently, less access to medical care. It seems that the stigma of HCV hurts more than the knowledge that they are suffering from hepatitis C.

Suarez<sup>18</sup> believes that research too often excludes structural inequalities in the evaluation of stigmatization and that minorities, already stigmatized, less acknowledge stigmatization due to HCV infection.

**Table 4**

### Univariate regression analysis of certain sociodemographic factors according to stigma score

Variables	Beta	95% CI	<i>p</i>
Gender	0.071	-0.939–2.427	0.384
Residence	-0.190	-3.966–-0.376	0.018
Educational	0.040	-0.805–1.341	0.622
Financial state	-0.088	-2.284–0.656	0.276
Marital status	-0.019	-0.848–0.669	0.816
Family status	0.161	0.011–1.278	0.046
Abandonment by partners	6.616	3.076–10.157	< 0.001
The use of psychoactive substances before morbidity	2.630	0.971–4.289	0.002

CI – confidence interval.

**Table 5**

### Multivariate regression model of independent variables according to stigma score

Variables	Beta	95% CI	<i>p</i>
Residence	-0.109	-3.076–0.579	0.179
Family status	0.061	-0.409–0.902	0.459
Abandonment by partners	5.158	1.411–8.905	0.007
The use of psychoactive substances before morbidity	0.137	-0.336–3.265	0.110
Marital status	0.059	-0.464–1.021	0.460

CI – confidence interval.

**Table 6**

**The presence of stigmatization by gender**

Type of stigmatization	Disagree n (%)	Agree n (%)	$\chi^2$	<i>p</i>
It is not the same as others				
male	63 (66.3)	32 (33.7)		
female	29 (49.2)	30 (50.8)		
total	92 (59.7)	62 (40.3)	4.4288	0.035*
Feels dirty				
male	69 (72.6)	26 (27.4)		
female	35 (59.3)	24 (40.7)		
total	104 (67.5)	50 (32.5)	2.9214	0.08
Feels that he/she is a bad person				
male	84 (88.4)	11 (11.6)		
female	53 (89.8)	6 (10.2)		
total	137 (89)	17 (11)	0.0731	0.786
People with hepatitis C are repulsive				
male	55 (57.9)	40 (42.1)		
female	33 (55.9)	26 (44.1)		
total	88 (57.1)	66 (42.9)	0.0569	0.8115
People with hepatitis C are rejected				
male	50 (52.6)	45 (47.4)		
female	28 (47.5)	31 (52.5)		
total	78 (50.6)	76 (49.4)	0.3873	0.533
Hurt by the reaction of others				
male	68 (71.6)	27 (28.4)		
female	33 (55.9)	26 (44.1)		
total	101 (65.6)	53 (34.4)	3.9221	0.047*
Stopped hanging out with some people because of their reactions				
male	83 (87.4)	12 (12.6)		
female	52 (88.1)	7 (11.9)		
total	135 (87.7)	19 (12.3)	0.0197	0.8884
Lost friends				
male	82 (86.3)	13 (13.7)		
female	56 (94.9)	3 (5.1)		
total	138 (89.6)	16 (10.4)	2.04	0.1079
Worried that others tell about their illness				
male	68 (71.6)	27 (28.4)		
female	42 (71.2)	17 (28.8)		
total	110 (71.4)	44 (28.6)	0.0027	0.958

General mental pain is associated with the total score of stigma, while specific symptoms are associated with certain types of stigma. Depression and anxiety are positively correlated with more personal effects of stigma in contrast to concerns about public attitudes or disclosure. Fear of rejection and negative self-image are essential for mental health. Social support shows a similar pattern<sup>19</sup>. Upon the recommendation of Mikocka-Walus et al.<sup>20</sup> all patients suffering from hepatitis C should be tested for depression because in their study 34% of patients with hepatitis C had depression<sup>20</sup>.

It is often thought that suffering from HCV infection are to be blamed themselves for their risky behavior so a negative attitude toward them follows, even by health care workers, which indicates the lack of information) and the level of knowledge of health workers about HCV infection. The study shows that 41% of HCV patients had some kind of difficulties in communicating with their doctor. The patients

reported twice more often the difficulties with subspecialists compared with general practitioners. The authors<sup>21</sup> believe that this may be the consequence of the coexistence of emotional and social problems. In the Australian study, 65% of patients with HCV said they had experienced stigmatization in the health institution. Due to the disease, 35% to more than 85% of HCV-infected were stigmatized<sup>22</sup>.

In their research Moore et al.<sup>23</sup>, showed the fact that 84.6% of patients with hepatitis C experienced stigmatization. Older than 65 years and Hispanics were stigmatized. The most common stigmatizers were health care workers (at 54.5%), and the patients experienced stigmatization in the family environment, at work, in health care institutions and society<sup>24</sup>.

HCV stigmatization and discrimination are often equaled to the one of HIV infection. Cabrera's data support the links between greater stigma and increased depressive syndrome and impaired quality of life of people living with

HIV / HCV. In fact, people living with HIV are at increased risk of coinfection with HCV: in Canada the percentage is around 25% and in North America in injecting drug users even 50%–90%<sup>15</sup>.

Between the sexes there was no statistically significant difference in the overall stigma score. According to the type of stigmatization in two, “is not like the other” and “hurt by the reaction of others”, it was registered that a significantly large number of men answered that they did not agree with this view. The explanation may be that some of the subjects did not experience lowering of self-esteem due to their education and knowledge of the disease transmission, but eventually the effects of stigma could be changed<sup>25</sup>. Studies show that women are generally more stigmatized and have a higher prevalence of diagnosis of posttraumatic stress disorder (45.16%) than men (20.58%)<sup>22,26</sup>.

In Egypt, the current response of over 60% of patients with HCV is that they feel sadness and concern and over 40% feel dirty and dangerous for others. This is more expressed in women. Later less than 30% felt like this. Over 35% reported disturbances in relationships with family. Because of the nervousness, 32.6% alienated from the family; due to the fear 24.8%. Women had a higher degree of alienation from the partners in marriage. More than 35% reported problems in relationships with friends (due to fatigue 25.4% of women and due to nervousness 20.4% of men isolated themselves). The loss of friends, due to fear that they will transmit the disease to them, more women (12.4%) suffer than men (5.7%). A higher number of men (52.3%) reported employment problems, and job loss (40.2%). As more as 70% of patients have financial problems; 13% of patients are stigmatized, of whom 71% are male. The main cause of stigmatization is a false image of the transmission mode (operation and sharing of food). Because of sexual orientation, 12.2% of men and 15% of women are stigmatized<sup>27</sup>.

Significantly higher values of stigma score have been found in subjects who live in the city (72.1% of subjects) compared to those living in the countryside. In contrast, another study shows that the fear of discovering HCV status and violation of patient confidentiality may even be stronger in rural areas and all this is because of the fear of being isolated from the community<sup>28</sup>.

Family plays a decisive role in health and disease of its members. It solves with its own resources about 75% of the total health needs. Many failures and poor results are due to superficiality and errors in communication, the lack of empathic attitude and the lack of partnership<sup>29</sup>. Marital condition significantly affects stigmatization. This study found that the unmarried subjects (27.3%) have a higher degree of stigmatization compared to married ones. A study on the health status, health needs and utilization of health services of population in Serbia in 2000 finds that in the population of Serbia single ones are more satisfied with the quality of their life than the married ones. Other studies show that married people are happier than others<sup>30</sup>. This indicates that stigmatization is more tolerant in those who have the support of their families and are socially active.

The subjects left by the partners due to their disease had significantly higher level of stigmatization than not abando-

ned. Multiple regression analysis found that this was the only predictor of the occurrence of stigmatization. To the question that people with hepatitis C are rejected due to the disease, 49.4% of the subjects agreed with that, more women agreed. For fear of detection and rejection, a large number of patients decide to keep silent about their disease. In their study Blasiolo et al.<sup>31</sup> find that 45% of patients with hepatitis C lose at least one relationship, due to their illness, 17% of patients have the deterioration of social contacts, which caused less sexual intercourse, and 16% had deterioration of relations with family members. A total of 12% of the subjects lose at least one friend, 8% state multiple losses that led to social isolation and 7% isolate themselves from the family and friends. A quarter of the patients report that their family members are concerned about their own health.

People who live with their parents have a significantly higher stigma score than those who live with a spouse and children. People who develop a positive identity as members belonging to the family will develop a positive perception and experience of themselves because they got social support from their family and will not feel stigmatized nor will they stigmatize themselves<sup>29</sup>. Many patients in the studies by Manos et al.<sup>32</sup> declare that they deliberately isolate themselves from friends and activities, sometimes to avoid explaining or talking about their situation. Their illness and/or treatment 24.5% conceal from their friends, but they have the support of their family members in 79.5%, while 14.8% have no support of their spouse.

Before their disease had been diagnosed 35.7% of the subjects consumed drugs (31.17% heroin), and after that 3.2% consumed marijuana. The subjects who used drugs prior to the diagnosis of hepatitis C virus were more stigmatized than those who did not consume drugs. The World Health Organization estimates that in Europe, more than 19 million people are infected with hepatitis C virus and that 67% of infected are injectable drug users<sup>33</sup>. The central and special feature of the stigma of HCV in the Western world is its connection with injecting drug users<sup>34</sup>. In Poland, a high prevalence of HCV (42.7%) and HIV (3.2%) infections among intravenous drug users, who inject drugs less than 2 years, and the users under the age of 25 years old (49.5% and 8.8% HCV HIV), indicates the permanent transfer of both infections in this population. There was a strong association of low socioeconomic status and deprivation of liberty with a higher prevalence of blood-borne diseases<sup>35</sup>. A study of veterans, mostly from the Vietnam War, has found a high prevalence of psychiatric disorders and drug use in outpatients with CHC when they are going through the identification of the therapy. People with this comorbidity are contraindicated for treatment with pegylated interferon<sup>36</sup>. As in our region there was the war, post-traumatic stress and its consequences are not rare, so treatment of these patients requires multidisciplinary access.

In this study, only one health worker was registered (0.65% of respondents) with the diagnosis of CHC while he was a student, so it can not be taken as an occupational hazard. In the study conducted in Serbia and Montenegro, it was found that 6.1% of health care workers (HCWs) are with hepatitis C<sup>37</sup>. Occupational exposure of HCWs and medical students to percutaneous injuries represents a significant source of bloodborne diseases infection

(40% of cases of hepatitis B and C, and 2.5% of HIV cases among HCWs)<sup>38</sup>. Vaccination is an important measure of prevention against hepatitis B, but not against HCV infection<sup>39</sup>. In Egypt, there is a high rate of HCV infection among HCWs due to percutaneous injuries while surgical and dental interventions and perinatal care are responsible for the transmission of HCV in the population<sup>40</sup>. Not all cases of accidental injuries are reported<sup>41</sup> probably because of irregularities, speed and recklessness at work. Studies mainly investigate stigmatization and discrimination of patients by HCWs while professionally ill health workers are rarely the subjects of the investigation<sup>42</sup>. This points to the possibility that the characteristics of the patients under their care, who have already been subjected to the social stigma, are also projected on them<sup>43</sup>.

## Conclusion

Stigmatization is significantly present in people who are not married, live in the city, who were left by the partner due to hepatitis C, in patients who used drugs before the diagnosis of the disease and in those who live with their parents. Multivariate analysis allocated, as a significant predictor, abandonment by the partners after the diagnosis. Statistical significance was found in two elements of internal stigmatization. It is necessary to intensify activities on educating patients and people living with them, as well as service providers in various sectors, on risk factors, modes of transmission and protection measures and thus remove the obstacles which prevent patients suffering chronic HCV to seek help.

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