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Assessment of coping with illness among patients with hepatitis C – on example of research in Poland

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Abstract

Introduction: In Poland approximately 2% of the population are infected with HCV. The majority (70-80%) of persons infected with HCV develop chronic hepatitis C which, when untreated, may lead to cirrhosis and/or hepatocellular carcinoma. The skills of coping with stress and acceptance of chronic illness may motivate patients for participation in treatment and leading a health-promoting life style.

Objective: The aim of the study was assessment of coping with illness in patients with chronic hepatitis C.

Materials and Method: The study included 220 adults with chronic hepatitis C, and was conducted by the method of a diagnostic survey using the Polish questionnaire: *Brief Method of Assessment of Coping with Illness (Krótka Metoda Oceny Radzenia Sobie z Chorobą - KMORSZCH)*, the *Acceptance of Illness Scale (AIS)*, and an author-constructed questionnaire.

Results: The examined group of patients with hepatitis C most strongly presented style oriented on emotions and passivity (mean score 1.20), and style focused on problem solving (mean score 1.05), followed by respondents who presented avoidance-oriented style (mean score 0.98), whereas the style focused on seeking the best solution to the problem was most rarely chosen (mean score 0.77). It was found that the more frequently the respondents presented style oriented on experiencing emotions and passivity, to the significantly lower degree they accepted their illness. Patients with higher education significantly more often presented style focused on seeking the best solution to the problem ($p < 0.045$), while those with the lowest level of education significantly more frequently were oriented on experiencing emotions and passivity ($p < 0.001$). Rural inhabitants significantly more often presented style oriented on experiencing emotions and passivity ($p < 0.002$). The remaining independent variables: gender, age, marital status, number of years of illness, and occupational activity had an insignificant effect on the selection of the style of coping with hepatitis C.

Conclusions: The results of the study confirm the need for psychotherapeutic actions with respect to patients with hepatitis C in order to help them cope with the chronic disease,

because they most often chose style oriented on emotions and passivity. Psychological assistance should be provided especially for the group of patients who have difficulty with acceptance of the illness.

Key words: *mechanisms of coping with disease, acceptance of illness, hepatitis C*

Introduction

Chronic diseases are the source of stress for patients, who are often concerned about prognosis, risk of disability, as well as adverse effect of the drugs used. Psychological state of the chronically ill patients may be assessed in categories of the mechanisms of coping with stress. The concept of stress introduced by Selye covers a set of typical psychophysical responses occurring as 'the nonspecific response of the body to any demand made upon it [1]. In a chronic disease it is important how the body copes with stress, and what mechanisms of coping with stress it triggers. Lazarus and Folkman popularized the concept of coping with stress [2]. According to Huber in 80-90% of cases there is a cause-effect relationship between stress and illness situations [3].

According to Polish researchers the mechanisms of coping with stress resulting from diagnosis or intensity of symptoms may be assessed. A simple tool can be used for this purpose – the questionnaire: *Brief Method of Assessment of Coping with Illness* (KMORSZCH). This tool may be used to recognize four major styles of coping with stress caused by illness: task-oriented (striving to solve the problem); solution-focused (seeking the best, latest solutions); emotion-oriented style (characteristic of persons who in stressful situations focus on own experiences); and avoidance-oriented (consists on coping with stress by refraining from thinking and experiencing situations which are its source) [4, 5].

Relevant literature shows that persons with hepatitis C experience psychological problems in coping with stress. The source of stress may be physical complaints related with the disease and using drugs. In patients with hepatitis C responses to stress depend on individual personality traits, on mechanisms for coping with stress [6, 7]. According to Papadimitriou the approach to patients with hepatitis C should be of a holistic character and consider biological, psychological, and social aspects of life, because this group of patients suffer as a whole [8]. Bariera et al. emphasize that patients with hepatitis C often feel stigmatized in their environment, have insufficient support in care and, additionally, must cope with physical and psychological complaints [7].

Therefore, responses to chronic hepatitis C may be considered in two categories: selection of the style of coping with the disease, and assessment of the level of acceptance of illness.

Objective: The aim of the study was assessment of coping with illness in patients with chronic hepatitis C.

Materials and Method

The study included a group of 220 adults (aged 18 - 87) with chronic hepatitis C. The majority of respondents were females (52.3%), compared to males (47.7%). Into the study were enrolled patients treated in seven Polish hospitals, after obtaining consent from managers of these hospitals and patients. The basic criterion of qualification for the study group was hepatitis C confirmed by medical diagnosis. The study was conducted during the period from August 2014 - May 2018. The consent for research was obtained from the Senate of the Higher School in Radom (No 8/2014). The Senate carefully considered the research project entitled: *'Analysis of medical and social situation of patients with the diagnosis of hepatitis C'* from the ethical aspect, taking into account relevant legal provisions concerning biomedical research in effect in Poland.

The study was carried out using a diagnostic survey and three research tools. The first tool was a standard Polish questionnaire - *Brief Method of Assessment of Coping with Illness (KMORSZCH)* – version for males and females by Kokoszka et al. The questionnaire consists of 16 items systematized into 4 domains concerning the style of coping with illness (4 questions each). Domain I – style focused on problem solving; Domain II - style focused on seeking the best solution to the problem; Domain III – style oriented on experiencing emotions and passivity; Domain IV – avoidance-oriented style. The questions in the questionnaire are aimed at determination of the mechanisms of coping with illness dominant in a patient [9]. The second tool was the standard questionnaire - *Acceptance of Illness Scale (AIS)* by Felton, Revenson and Hinrichsen, Polish adaptation by Juczyński. The AIS is the tool to assess the level of acceptance of illness by the patient. The higher the level of acceptance of illness, the lower the intensity of negative behaviours and emotions related with the disease and its treatment. The AIS consists of 8 statements concerning negative consequences of the state of health. Each statement is ascribed a five-degree scale by which a patient may specify his/her present state of health. The measure of acceptance of illness is the sum of all scores and remains within the range from 8 - 40 scores. The higher the result, the higher the level of acceptance of illness, and less negative emotions. As a low result are considered values below 20 scores, as a mean result values within the range from 20 - 30 scores, whereas values above 30 scores mean a high or full acceptance of illness [10]. The third research tool was an author-constructed questionnaire developed for the purpose of this

study containing, among other things, questions concerning demographic and social data of respondents with hepatitis C.

In the case of qualitative data the results of the study were presented using numbers and percentages, while quantitative data were presented using the mean value, standard deviation, median, as well as minimum and maximum value. The distribution of quantitative data was investigated using the Shapiro-Wilk test. For non-normally distributed variables the Mann-Whitney U test (MWU, Z) was applied to compare two independent groups, and Kruskal-Wallis test (KW, H) to compare three or more independent groups. The Spearman's rank correlation (R) was also used. A 5% error was adopted and the p values $p < 0.05$ were considered statistically significant. The analysis was performed using the statistical software StatSoft Statistica 13.1 PL.

Results

The study included 220 patients (115 females – 52.3%; 105 males – 47.7%). The largest number of respondents were aged 51-65 (42.3%), whereas the smallest – in the youngest group, i.e. aged 18-35 (6.8%); mean age 54.7 ± 12.69 (the youngest respondent was aged 18, while the oldest - 87). The respondents' level of education was as follows: primary vocational (38.2%), secondary school (37.3%), higher (15.0%), and primary (9.5%). The majority of the examined patients were urban inhabitants (66.8%), compared to rural inhabitants (33.2%). The largest number of respondents were married (47.7%), followed by those widowed (18.6%), never married (18.2%), and divorced – 13.6% of the total number of patients in the study. It was found that the majority of patients with hepatitis C were occupationally active (40.0%), followed by those who maintained themselves on a disability allowance – 39.5%, and retirement pension – 14.1%. Few respondents were unemployed (3.6%), on sick leave, in the course of education, and one person used rehabilitation benefit.

The mechanisms of coping with illness dominant in patients with hepatitis C were investigated using the *Brief Method of Assessment of Coping with Illness (KMORSZCH)*, which allows recognition of four styles of coping with illness: style focused on problem solving, style focused on seeking the best solution to the problem, style oriented on emotions and passivity, and avoidance-oriented style. Below are presented data concerning self-assessment of mechanisms of coping with illness, Tab. 1., Fig. 1.

Table 1. Mechanisms of coping with illness (KMORSZCH questionnaire).

Mechanisms of coping with illness (KMORSZCH):	N*	M*	SD*	Me*	Min*	Max*	CI*	
							-95%	+95%
Style focused on problem solving	220	1.05	1.03	1.00	0	4	0.94	1.13
Style focused on seeking the best solution to the problem	220	0.77	0.81	1.00	0	4	0.74	0.89
Style oriented on experiencing emotions and passivity	220	1.20	1.08	1.00	0	4	0.99	1.19
Avoidance-oriented style	220	0.98	1.04	1.00	0	4	0.95	1.15

*N-numbers, M-mean value, SD-standard deviation, Me-median, Min-minimum, Max-maximum, CI-confidence interval

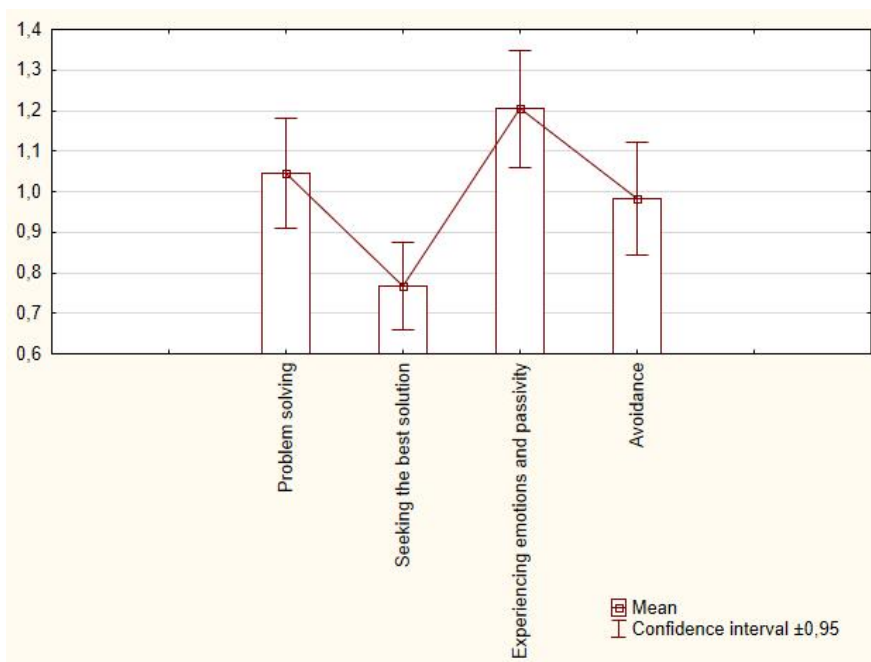


Figure 1. Distribution of results of mechanisms of coping with hepatitis C.

Patients with hepatitis C most often presented style oriented on emotions and passivity (mean value 1.20 scores \pm 1.08 scores), followed by those who preferred style focused on problem solving (mean value 1.05 scores \pm 1.03 scores), avoidance-oriented style (mean value 0.98 scores \pm 1.04 scores), whereas the smallest number of patients with hepatitis C presented style focused on seeking the best solution to the problem (mean value 0.77 score \pm 0.81 score).

The degree of acceptance of illness was assessed using the *Acceptance of Illness Scale (AIS)*, the result of which remains within the range from 8 - 40 scores – Tab. 2.

Table 2. Level of acceptance of illness self-assessed by the respondents according to the AIS.

Level of acceptance of illness (result of AIS):	n	%
lack of acceptance or low acceptance of illness (<20 scores)	63	28.7
mediocre acceptance of illness (20-30 scores)	92	41.8
high, full acceptance of illness (>30 scores)	65	29.5
Total	220	100.0

The largest number of respondents mentioned that their level of acceptance of disease remained within the category of the mean values (20-30 scores – 41.8%), followed by respondents who indicated a high level of acceptance of hepatitis C (>30 scores – 29.5%), while the smallest number of respondents evaluated their level of acceptance of illness to be on the lowest level (<20 scores – 28.7%).

The mechanisms of coping with illness were also investigated according to the level of acceptance of illness – Tab. 3., Fig. 2.

Table 3. Mechanisms of coping with illness (KMORSZCH questionnaire) and the level of acceptance of illness (AIS).

Mechanisms of coping with illness (KMORSZCH):	Result AIS	N*	M*	SD*	Me*	Min*	Max*	CI		Statistic	
								-95%	95%	Spearman's R	p
style focused on problem solving	<20	63	0.84	0.85	1.00	0	3	0.72	1.03	0.12	0.088
	20-30	92	1.07	1.08	1.00	0	4	0.94	1.26		
	>30	65	1.22	1.10	1.00	0	4	0.94	1.33		
style focused in seeking the best solution to the problem	<20	63	0.71	0.71	1.00	0	3	0.60	0.86	0.09	0.189
	20-30	92	0.71	0.83	1.00	0	4	0.73	0.97		
	>30	65	0.91	0.86	1.00	0	3	0.73	1.04		
style oriented on experiencing emotions and passivity	<20	63	1.52	1.06	2.00	0	4	0.90	1.29	-0.25	0.000
	20-30	92	1.16	1.06	1.00	0	4	0.93	1.24		
	>30	65	0.95	1.07	1.00	0	4	0.91	1.29		
avoidance-oriented style	<20	63	0.92	0.89	1.00	0	3	0.75	1.07	-0.01	0.881
	20-30	92	1.07	1.12	1.00	0	4	0.98	1.31		
	>30	65	0.92	1.08	1.00	0	4	0.92	1.31		

* N-numbers, M-mean value, SD-standard deviation, Me-median, Min-minimum, Max-maximum, CI-confidence interval

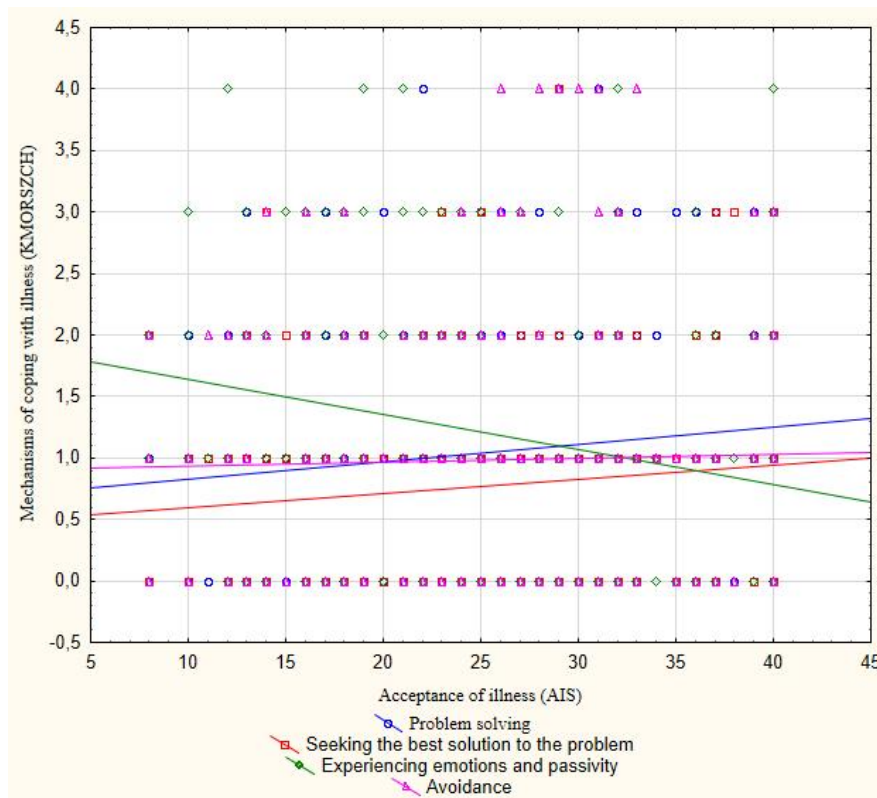


Figure 2. Distribution of results of coping with hepatitis C according to acceptance of illness by the respondents.

It was found that the more the respondents focused on the style of coping with disease oriented on experiencing emotions and passivity, to the significantly lower level they accepted their illness ($R = -0.25$; $p < 0.0001$). It was observed that patients concentrated on style focused on problem solving ($R = 0.12$) and style focused on seeking the best solution to the problem ($R = 0.09$), showed a higher level of acceptance of illness; however the investigated relationships were insignificant; $p > 0.05$.

Each respondent was asked about knowledge concerning the duration of hepatitis C. These data were analyzed according to the mechanisms of coping with illness – Tab. 4, Fig. 3.

Table 4. Assessment of mechanisms of coping with hepatitis C by respondents according to the duration of the disease.

Mechanisms of coping with illness (KMORSZCH):	Duration of disease	N*	M*	SD*	Me*	Min*	Max*	CI		Statistic	
								- 95%	+ 95%	Spearman's R	p
style focused on problem solving	1-5 years	44	1.45	1.23	1.00	0	4	1.02	1.56	-0.12	0.065
	6-10 years	57	0.86	0.97	1.00	0	3	0.82	1.19		
	11-20 years	86	1.08	0.97	1.00	0	3	0.85	1.14		
	>20 years	33	0.73	0.80	1.00	0	2	0.64	1.06		
style focused on seeking the best solution to the problem	1-5 years	44	0.55	0.63	0.00	0	2	0.52	0.79	0.09	0.177
	6-10 years	57	0.93	0.92	1.00	0	3	0.78	1.13		
	11-20 years	86	0.71	0.72	1.00	0	3	0.62	0.84		
	>20 years	33	0.94	0.97	1.00	0	4	0.78	1.28		
style oriented on experiencing emotions and passivity	1-5 years	44	0.93	0.87	1.00	0	3	0.72	1.11	0.01	0.848
	6-10 years	57	1.30	0.98	1.00	0	3	0.83	1.20		
	11-20 years	86	1.38	1.18	1.00	0	4	1.03	1.39		
	>20 years	33	0.94	1.14	1.00	0	4	0.92	1.51		
avoidance-oriented style	1-5 years	44	1.07	0.97	1.00	0	4	0.80	1.23	0.01	0.909
	6-10 years	57	0.91	1.11	1.00	0	4	0.93	1.36		
	11-20 years	86	0.83	0.87	1.00	0	3	0.76	1.02		
	>20 years	33	1.39	1.32	1.00	0	4	1.06	1.75		

* N-numbers, M-mean value, SD-standard deviation, Me-median, Min-minimum, Max-maximum, CI-confidence interval

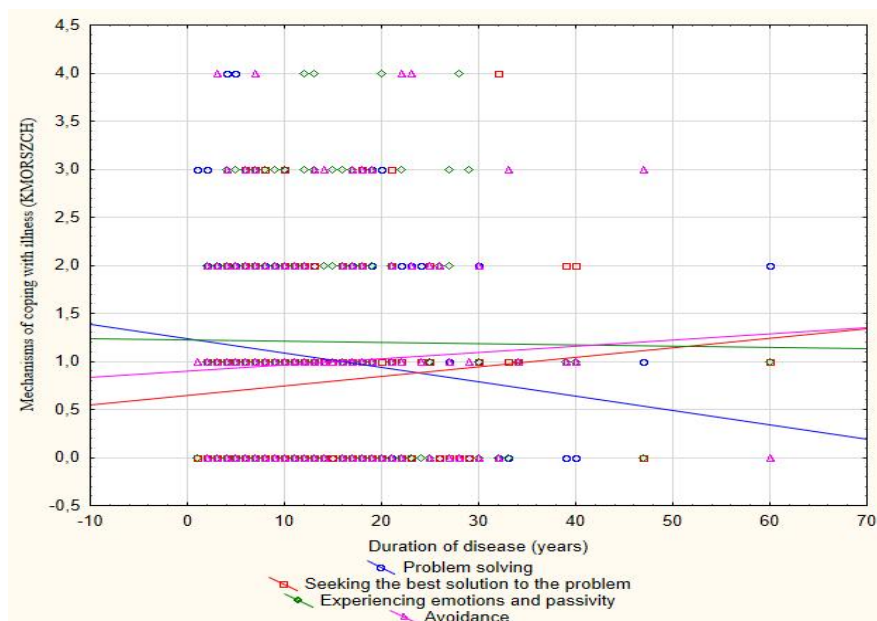


Figure 3. Distribution of results of mechanisms of coping with hepatitis C according to the duration of the disease.

The largest number of respondents reported that the duration of the disease remained within the range from 11 – 20 years (86 persons – 39.1%), while the smallest number had been ill with hepatitis C for more than 20 years (33 persons – 15.0%). It was confirmed that the duration of the disease (hepatitis C) was not significantly related with any presented style of coping with illness. A tendency was observed that the longer the duration of the disease, the lower the intensity of the preferred style focused on problem solving ($R = -0.12$; $p = 0.065$), and the higher the intensity of style focused on seeking the best solution to the problem ($R = 0.09$; $p = 0.177$).

Table 5 presents the results concerning mechanisms of coping with illness according to gender.

Table 5. Assessment of mechanisms of coping with hepatitis C by respondents according to gender.

Mechanisms of coping with illness (KMORSZCH):	Gender	N*	M*	SD*	Me.*	Min.*	Max.*	CI		Statistic	
								- 95%	+ 95%	UMW Z	p
style focused on problem solving	male	105	1.00	0.94	1.00	0	3	0.83	1.09	0.24	0.810
	female	115	1.09	1.10	1.00	0	4	0.98	1.27		
style focused on seeking the best solution to the problem	male	105	0.74	0.78	1.00	0	3	0.69	0.91	0.34	0.734
	female	115	0.79	0.83	1.00	0	4	0.74	0.96		
style oriented on experiencing emotions and passivity	male	105	1.33	1.13	1.00	0	4	1.00	1.31	-1.52	0.130
	female	115	1.09	1.02	1.00	0	4	0.91	1.17		
avoidance-oriented style	male	105	0.92	1.09	1.00	0	4	0.96	1.26	1.19	0.235
	female	115	1.03	1.00	1.00	0	4	0.88	1.15		

* N-numbers, M-mean value, SD-standard deviation, Me-median, Min-minimum, Max-maximum, CI-confidence interval

The numerical data in Table 5 show that there were no significant differences in the style of coping with illness undertaken by respondents according to gender. Apart from this, a tendency was observed that males, more often than females presented style oriented on experiencing emotions and passivity (1.33 scores vs. 1.09 scores; $p = 0.130$).

The mechanisms of coping with hepatitis C were also assessed according to the respondents' age – Tab. 6, Fig. 4.

Table 6. Assessment of mechanisms of coping with hepatitis C by respondents according to age.

Mechanisms of coping with illness (KMORSZCH):	Age	N*	M*	SD*	Me.*	Min.*	Max.*	CI		Statistic	
								- 95%	+ 95%	Spearman's R	p
style focused on problem solving	18-49 years	80	1.21	1.11	1.00	0	4	0.96	1.32	-0.06	0.373
	50-64 years	89	0.89	1.02	1.00	0	4	0.89	1.19		
	65-87 years	51	1.06	0.88	1.00	0	3	0.74	1.10		
style focused on seeking the best solution to the problem	18-49 years	80	0.60	0.72	0.00	0	3	0.62	0.86	0.11	0.092
	50-64 years	89	0.94	0.93	1.00	0	4	0.81	1.10		
	65-87 years	51	0.73	0.63	1.00	0	2	0.53	0.79		
style oriented on experiencing emotions and passivity	18-49 years	80	1.14	1.11	1.00	0	4	0.96	1.32	0.05	0,25
	50-64 years	89	1.24	1.06	1.00	0	4	0.92	1.24		
	65-87 years	51	1.25	1.09	1.00	0	3	0.91	1.36		
avoidance-oriented style	18-49 lat	80	1.05	1.20	1.00	0	4	1.04	1.42	0.01	0.935
	50-64 years	89	0.93	0.95	1.00	0	4	0.83	1.12		
	65-87 years	51	0.96	0.94	1.00	0	3	0.78	1.17		

* N-numbers, M-mean value, SD-standard deviation, Me-median, Min-minimum, Max-maximum, CI-confidence interval

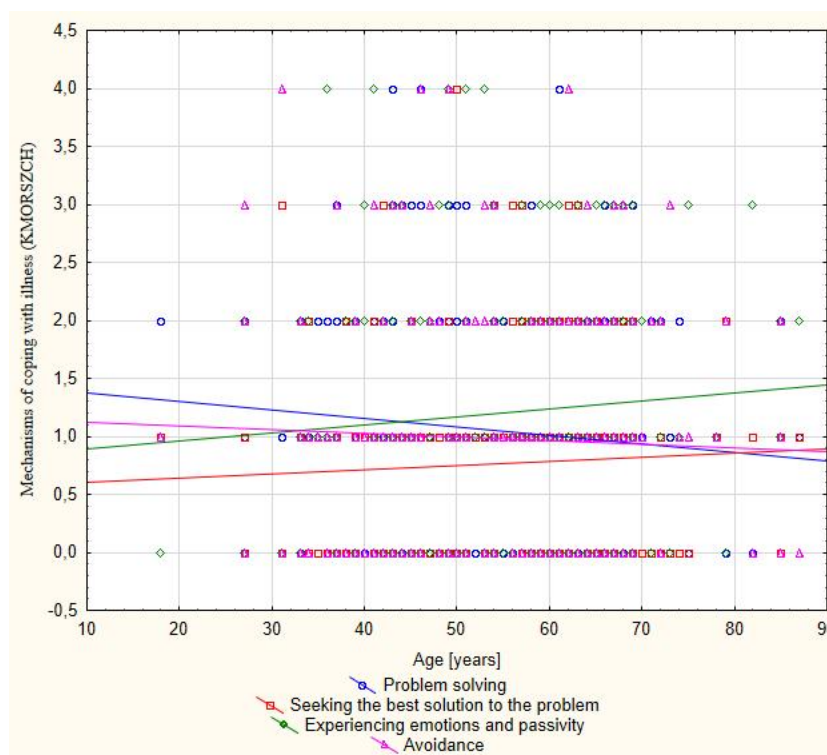


Figure 4. Distribution of coping with hepatitis C according to age.

No significant differences in the presented style of coping with the disease undertaken by respondents were found according to age. A tendency was observed that the more advanced the age, the more often the examined patients focused on style of seeking the best solution to the problem (R=0.11; p=0.092).

The mechanisms of coping with hepatitis C were also investigated according to the respondents' level of education – Tab. 7.

Table 7. Assessment of mechanisms of coping with hepatitis C according to the respondents' level of education.

Mechanisms of coping with illness (KMORSZCH):	Level of education	N*	M*	SD*	Me.*	Min.*	Max.*	CI		Statistic	
								- 95%	+ 95%	Spearman's R	p
style focused on problem solving	primary	21	0.62	0.80	0.00	0	2	0.62	1.16	0.08	0.235
	primary vocational	84	1.07	0.94	1.00	0	3	0.82	1.11		
	secondary school	82	1.07	1.15	1.00	0	4	1.00	1.36		
	higher	33	1.18	1.01	1.00	0	4	0.82	1.34		
style focused on seeking the best solution to the problem	primary	21	0.52	0.60	0.00	0	2	0.46	0.87	0.14	0.045
	primary vocational	84	0.68	0.66	1.00	0	2	0.57	0.78		
	secondary school	82	0.80	0.88	1.00	0	4	0.76	1.04		
	higher	33	1.06	1.00	1.00	0	3	0.80	1.32		
style oriented on experiencing emotions and passivity	primary	21	1.52	1.33	2.00	0	4	1.02	1.92	-0.22	0.001
	primary vocational	84	1.44	1.03	1.00	0	4	0.90	1.22		
	secondary school	82	1.01	1.06	1.00	0	4	0.92	1.25		
	higher	33	0.88	0.93	1.00	0	3	0.75	1.23		
avoidance-oriented style	primary	21	1.33	1.49	1.00	0	4	1.14	2.16	0.00	0.988
	primary vocational	84	0.81	0.75	1.00	0	2	0.65	0.89		
	secondary school	82	1.11	1.17	1.00	0	4	1.01	1.38		
	higher	33	0.88	0.96	1.00	0	3	0.77	1.27		

* N-numbers, M-mean value, SD-standard deviation, Me-median, Min-minimum, Max-maximum, CI-confidence interval

It was found that style focused on seeking the best solution to the problem was significantly more frequently presented by respondents with a higher level of education (R=0.14, p<0.05). In turn, respondents who had a lower level of education significantly more often focused on experiencing emotions and passivity (R= -0.22; p<0.001). No significant differences in the style focused on problem solving and avoidance-oriented style were noted according to the level of respondents' education.

Analysis of the collected research material included also the assessment of coping with hepatitis C according to respondents' place of residence. Table 8 and Figure 5 present the results.

Table 8. Assessment of mechanisms of coping with hepatitis C according to respondents' place of residence.

Mechanisms of coping with illness (KMORSZCH):	Place of residence	N*	M*	SD*	Me*	Min.*	Max.*	CI		Statistic	
								- 95%	+ 95%	UMW Z	p
style focused on problem solving	rural	73	0.96	0.92	1.00	0	3	0.79	1.10	-0.57	0.569
	urban	147	1.09	1.08	1.00	0	4	0.97	1.22		
style focused on seeking the best solution to the problem	rural	73	0.60	0.64	1.00	0	2	0.55	0.76	-1.63	0.103
	urban	147	0.85	0.87	1.00	0	4	0.78	0.98		
style oriented on experiencing emotions and passivity	rural	73	1.53	1.11	2.00	0	4	0.95	1.32	3.03	0.002
	urban	147	1.04	1.03	1.00	0	4	0.93	1.17		
avoidance-oriented style	rural	73	0.90	1.07	1.00	0	4	0.92	1.28	-0.96	0.338
	urban	147	1.02	1.03	1.00	0	4	0.92	1.16		

* N-numbers, M-mean value, SD-standard deviation, Me-median, Min-minimum, Max-maximum, CI-confidence interval

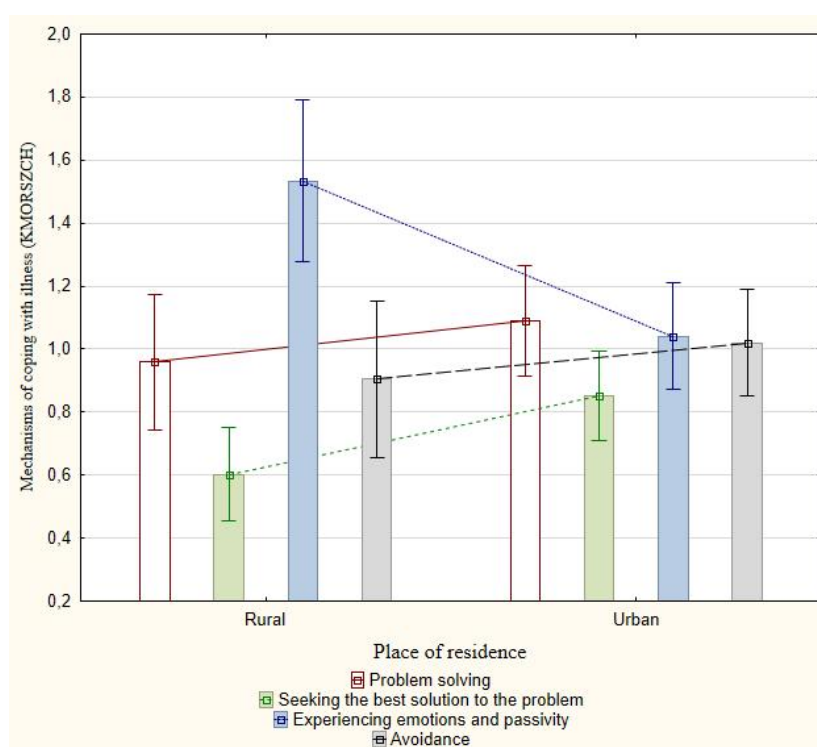


Figure 5. Distribution of mechanisms of coping with hepatitis C according to the respondents' place of residence.

It was found that rural inhabitants significantly more often than urban inhabitants while solving problems related with their illness focused on style oriented on experiencing emotions

and passivity (1.53 scores vs. 1.04 scores; $p < 0.002$). No significant differences in presentation of other styles of coping with illness were observed according to the place of residence. All the remaining styles were insignificantly more frequently preferred by urban than rural inhabitants.

While assessing coping with illness in patients with hepatitis C an independent variable was considered which is respondents' marital status – Tab. 9.

Table 9. Assessment of mechanisms of coping with hepatitis C according to respondents' marital status.

Mechanisms of coping with illness (KMORSZCH):	Marital status	N*	M*	SD*	Me*	Min.*	Max.*	CI		Statistic	
								- 95%	+ 95%	KW H	P
style focused on problem solving	never married	40	0.70	0.79	0.50	0	2	0.65	1.02	9.98	0.019
	married	109	1.13	1.05	1.00	0	4	0.92	1.21		
	divorced	30	0.77	0.90	0.50	0	3	0.71	1.21		
	widowed	41	1.37	1.16	1.00	0	4	0.95	1.48		
style focused on seeking the best solution to the problem	never married	40	1.00	0.96	1.00	0	4	0.79	1.23	3.39	0.334
	married	109	0.75	0.80	1.00	0	3	0.70	0.92		
	divorced	30	0.70	0.75	1.00	0	3	0.60	1.01		
	widowed	41	0.63	0.70	1.00	0	2	0.57	0.89		
style oriented on experiencing emotions and passivity	never married	40	1.08	1.23	1.00	0	4	1.01	1.58	3.69	0.297
	married	109	1.25	1.06	1.00	0	4	0.94	1.23		
	divorced	30	1.43	1.01	1.50	0	4	0.80	1.35		
	widowed	41	1.05	1.02	1.00	0	3	0.84	1.31		
avoidance-oriented style	never married	40	1.23	1.42	1.00	0	4	1.17	1.83	1.24	0.743
	married	109	0.87	0.91	1.00	0	4	0.81	1.05		
	divorced	30	1.10	1.16	1.00	0	4	0.92	1.55		
	widowed	41	0.95	0.80	1.00	0	3	0.66	1.03		

* N-numbers, M-mean value, SD-standard deviation, Me-median, Min-minimum, Max-maximum, CI-confidence interval

The respondents' marital status was not significantly related with the style of coping with illness undertaken by them. It was observed that patients who were widowed preferred style focused on problem solving, whereas those divorced style oriented on experiencing emotions and passivity.

The mechanisms of coping with illness were also assessed according to respondents' occupational activity. The results were analyzed using the Mann-Whitney U test and presented in Table 10, while Figure 6 demonstrates the distribution of results.

Table 10. Assessment of mechanisms of coping with hepatitis C according to respondents' occupational activity.

Mechanisms of coping with illness (KMORSZCH):	Occupationally active	N*	M*	SD*	Me*	Min.*	Max.*	CI		Statistic	
								-95%	+ 95%	UMW Z	p
style focused on problem solving	Yes	86	1.03	1.05	1.00	0	4	0.91	1.23	0.16	0.872
	No	134	1.05	1.02	1.00	0	4	0.91	1.16		
style focused on seeking the best solution to the problem	Yes	86	0.76	0.87	1.00	0	4	0.75	1.02	0.49	0.626
	No	134	0.78	0.77	1.00	0	3	0.69	0.88		
style oriented on experiencing emotions and passivity	Yes	86	1.10	1.06	1.00	0	4	0.92	1.25	1.09	0.274
	No	134	1.27	1.09	1.00	0	4	0.97	1.24		
avoidance-oriented style	Yes	86	1.10	1.10	1.00	0	4	0.95	1.29	-1.25	0.210
	No	134	0.90	1.00	1.00	0	4	0.90	1.14		

* N-numbers, M-mean value, SD-standard deviation, Me-median, Min-minimum, Max-maximum, CI-confidence interval

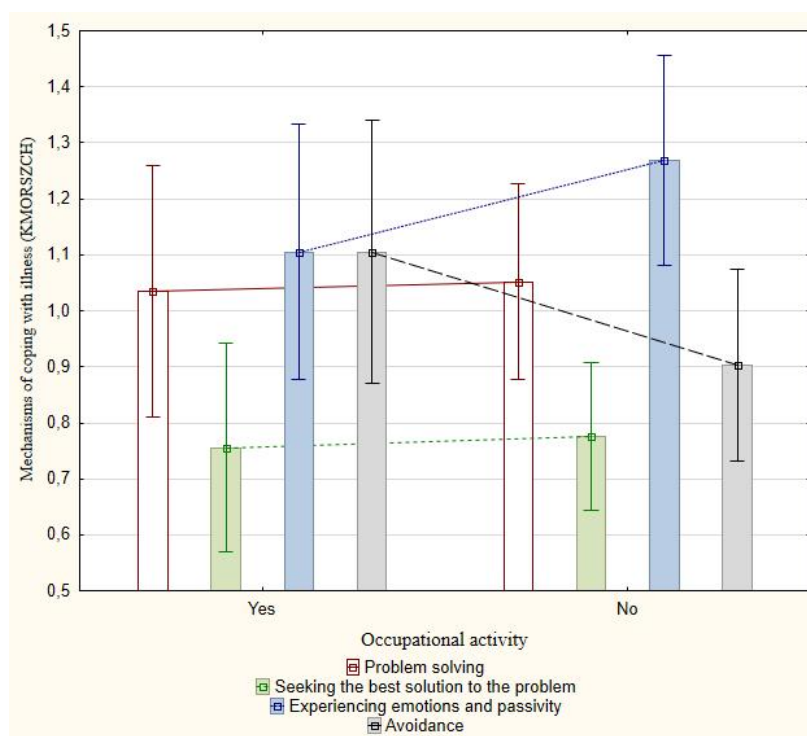


Figure 6. Distribution of results of mechanisms of coping with hepatitis C according to respondents' occupational activity.

Occupational activity of patients with hepatitis C was not significantly related with the style of coping with illness undertaken by them. It was observed that occupationally active persons more frequently focused on avoidance-oriented style.

Discussion

Chronic hepatitis C is associated with the risk of deterioration of the level of satisfaction with life, and may also exert an effect on disorders in the emotional sphere [11,

12]. The presented study showed that patients with hepatitis C most often preferred style oriented on experiencing emotions and passivity (mean value 1.20 scores \pm 1.08 scores) followed by style focused on problem solving (mean value 1.05 scores \pm 1.03 scores), and avoidance-oriented style (mean value 0.98 scores \pm 1.04 scores), whereas the smallest number of patients with hepatitis C presented style focused on seeking the best solution to the problem (mean value 0.77 scores \pm 0.81 score).

In the opinion of Kazmi et al. patients with hepatitis C or B at an advanced stage of the disease need treatment oriented on psychological support in order to elevate their level of satisfaction with life and help to accept the illness [13]. Based on the presented study it was confirmed that the largest number of respondents accepted hepatitis C in categories of the mean values (20-30 scores – 41.8%). Simultaneously it was demonstrated that the more the respondents focused on the style of coping with illness including experiencing emotions and passivity, they accepted their illness to a significantly lower degree ($p < 0.0001$). In turn, patients who presented style focused on problem solving and style focused on seeking the best solution to the problem showed a higher level of acceptance of illness; however, the assessed relationships were insignificant; $p > 0.05$. At the same time, it was confirmed that the duration of the disease (hepatitis C) was not significantly related with any presented style of coping with illness. A tendency was observed that the longer the duration of the disease, the lower the intensity of the preferred style focused on problem solving, and the higher the intensity of style focused on seeking the best solution to the problem.

According to Rim the strategy of coping with stress depends on many frequently overlapping factors, including gender [14]. The presented study showed that there were no significant differences in the styles of coping with hepatitis C undertaken by the respondents according to gender. It was observed that males more often than females presented style oriented on experiencing emotions and passivity.

According to Vaillant with age people become more mature with regard to strategies of coping with stress and the applied defence mechanisms. In his opinion older persons listen more to the recipients, are characterized by greater optimism and the sense of humour [15]. According to Steuden in the majority of the population the level of satisfaction with life increases with age [16]. The presented study demonstrated that there were no significant differences in styles of coping with illness undertaken by respondents according to age. A tendency was observed that with age the respondents focused more on style of seeking the best solution to the problem.

According to Polish researchers in patients with hepatitis C there occur disturbed social relationships, most frequently in persons with low level of education (74.7%) [17]. The results of the presented study confirmed that style focused on seeking the best solution to the problem was significantly more often presented by respondents with higher education status ($p < 0.05$), whereas those with lower education status were significantly more frequently oriented on experiencing emotions and passivity ($p < 0.001$).

According to Australian researchers rural inhabitants infected with HCV require improvement of coordination of treatment and a subjective approach to the infected person [18]. Based on the presented study it was demonstrated that rural inhabitants significantly more often than urban inhabitants while solving problems related with the disease focused on experiencing emotions and passivity ($p < 0.002$). No significant differences in the presentation of other styles of coping with illness were observed according to the place of residence.

Studies carried out by researchers show that a chronic disease may lead to the lack of observance of therapeutic recommendations, and loss of inner resources of coping with illness [19]. Based on the presented study it was confirmed that marital status was not significantly related with styles of coping with illness presented by the respondents. It was observed that respondents who were widowed more often preferred style focused on problem solving, while those divorced style oriented on experiencing emotions and passivity.

According to Endler and Parker avoidance-oriented style is applied by persons who take their minds off the problem and try not to experience emotions related with the disease. Instead, they engage themselves in activities related with work, or education [20]. Based on the presented study it was confirmed that occupational activity of patients with hepatitis C was not significantly related with strategies of coping with illness undertaken by the respondents. Simultaneously, it was observed that occupationally active persons more frequently presented avoidance-oriented style.

Conclusions:

1. According to the KMORSZCH questionnaire patients with hepatitis C, while coping with illness, presented style oriented on experiencing emotions and passivity.
2. The results of the study confirmed that the more frequently the respondents presented style oriented on experiencing emotions and passivity, to the significantly lower degree they accepted their illness according to the AIS.
3. It was demonstrated that rural inhabitants and persons with the lowest level of education while solving problems related with hepatitis C significantly more frequently undertook style oriented on experiencing emotions and passivity. At the same time, this style was

more often presented by males and respondents who were divorced; however the relationships were insignificant.

4. Style focused on seeking the best solution to the problem was most frequently presented by respondents with hepatitis C who had been ill for the longest time, those who were the oldest and those widowed.
5. Patients with chronic hepatitis C who were occupationally active, were the youngest, those with primary education, and females most frequently presented avoidance-oriented style.
6. The results of the study confirm the need for psychotherapeutic actions with respect to patients with hepatitis C in order to help them cope with chronic illness, especially the group of patients who have difficulties with acceptance of their illness.

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