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Illness Representation and Self-Assessment of Disability Level in Patients With Rheumatoid Arthritis

Obraz własnej choroby a samoocena stopnia niepełnosprawności u chorych na reumatoidalne zapalenie stawów

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Abstract

Background. Having been diagnosed, or sometimes even before diagnosis, a patient creates a representation of his/her illness (IR). This representation does not always coincide with medical knowledge. The studies show that IR has an influence on the seeking of medical help, the following of doctor's orders, and adaptation to a chronic disease.

Objectives. The primary aims of the study were examination of illness representations (IR) and establishment of their relationship with self-assessment of disability level in patients with rheumatoid arthritis (RA), while the secondary aim was identification of which of the factors examined influenced to the largest extent the emotional response of the patients suffering from RA.

Material and Methods. The study encompassed 88 women with diagnosed RA. The study participants were female patients hospitalised at Department of Rheumatology and Internal Diseases of the Academic Teaching Hospital in Wrocław, as well as female patients of the day-care department. The Health Assessment Questionnaire Disability Index and Pain Scale (HAQ-DI) was applied in the study; in order to examine illness representation the Revised Illness Perception Questionnaire (IPQ-R) was adapted to Polish conditions.

Results. A substantial majority of the study participants acknowledged their illness as severe (84%), and chronic with a cyclical course (77%). A majority (68%) of those suffering from RA have no illness coherence and are in emotional distress. As many as 86% of them believe that medicine will be efficacious in combating their condition, although only 50% of them know how to influence its course through their behaviour. The results of the study confirm a relationship between the disability indices assessed with HAQ-DI and the IR of those suffering from RA. High assessment of one's own disability is related to belief that the condition is severe and will last for a long time, a worse mood, a greater number of complaints reported, a weaker belief in treatment efficacy, and lack of understanding of one's own condition. The results of regression analysis indicate that the worst emotional distress in patients suffering from RA can be best predicted on the basis of lack of illness coherence, expectation of numerous negative consequences for the patient and his/her family, and lack of belief in treatment efficacy.

Conclusions. Number of reported complaints associated with RA, self-assessment of disability and pain are less significant in predicting emotional state than understanding of the condition, assessment of the consequences, and belief in treatment efficacy. In seeking the sources of emotional distress in patients suffering from RA, it is better to refer to the elements of IR than to disability self-assessment. The task of the physician is to encourage a patient to ask questions and give their opinions on the state of their health and their fears, as well as to assist in reconstruction of non-adaptive beliefs (*Adv Clin Exp Med* 2010, 19, 4, 503–511).

Key words: illness representations, illness perception, rheumatoid arthritis, IPQ-R, emotional distress.

Streszczenie

Wprowadzenie. Pacjenci po usłyszeniu diagnozy lub czasem nawet wcześniej tworzą obraz własny choroby (OWC). Obraz ten nie zawsze jest zbieżny z wiedzą medyczną. Badania pokazują, że obraz własnej choroby ma wpływ na szukanie pomocy medycznej, stosowanie się do zaleceń lekarza i adaptację do chronicznej choroby.

Cel pracy. Zbadanie obrazu własnej choroby i ustalenie jego relacji z samooceną stopnia niepełnosprawności u pacjentów z reumatoidalnym zapaleniem stawów (r.z.s.) i sprawdzenie, który z badanych czynników najbardziej decyduje o emocjonalnej odpowiedzi na chorobę chorych na r.z.s.

Materiał i metody. W badaniu wzięło udział 88 kobiet z rozpoznaniem r.z.s. Osobami badanymi były hospitalizowane pacjentki Kliniki Reumatologii i Chorób Wewnętrznych Akademickiego Szpitala Klinicznego we

Wrocławiu oraz pacjentki tamtejszego Oddziału Dziennego. W badaniu zastosowano HAQ-DI (*Health Assessment Questionnaire Disability Index and Pain Scale*); do zbadania obrazu własnej choroby zaadaptowano IPQ-R (*The Revised Illness Perception Questionnaire*) do warunków polskich.

Wyniki. Zdecydowana większość osób badanych uznała swoją chorobę za poważną (84%), przewlekłą, o cyklicznym przebiegu (77%). Większość (68%) osób chorych na r.z.s. nie ma koherencji z chorobą i jest w złej kondycji psychicznej. Aż 86% wierzy, że medycyna będzie skuteczna w walce z ich schorzeniem, ale tylko 50% wie, jak wpływać swoim zachowaniem na jej przebieg. Rezultaty badań potwierdzają związek między wskaźnikami niepełnosprawności mierzonymi HAQ-DI a obrazem własnej choroby chorych na r.z.s. Wysoka ocena własnej niepełnosprawności jest związana z przekonaniem, że choroba jest poważna, będzie trwała długo, gorszym nastrojem, większą liczbą zgłaszanych dolegliwości, mniejszą wiarą w skuteczność leczenia i brakiem rozumienia własnej choroby. Rezultaty analizy regresji wskazują, że gorszą kondycję psychiczną u chorych na r.z.s. najlepiej można przewidzieć na podstawie braku koherencji z chorobą, oczekiwania wielu negatywnych konsekwencji choroby dla chorego i jego rodziny oraz braku wiary w skuteczność leczenia.

Wnioski. W przewidywaniu kondycji psychicznej osób chorych na r.z.s. ma znaczenie nie tyle liczba opisywanych dolegliwości związanych z r.z.s., własna ocena niepełnosprawności czy ból, ale istotne jest rozumienie choroby, ocena konsekwencji i wiara w skuteczność leczenia. Szukając źródeł złej kondycji psychicznej u chorych na r.z.s., lepiej odwołać się do tych elementów obrazu własnej choroby niż samooceny niepełnosprawności. Zadaniem lekarza jest zachęcanie pacjenta do stawiania pytań i wyrażania opinii o swoim stanie zdrowia, obawach oraz pomoc w rekonstrukcji nieadaptacyjnych przekonań (*Adv Clin Exp Med* 2010, 19, 4, 503–511).

Słowa kluczowe: obraz własnej choroby, percepcja choroby, reumatoidalne zapalenie stawów, IPQ-R, zła kondycja psychiczna.

Having been diagnosed, or sometimes even before diagnosis, a patient creates a representation of his/her illness (IR). In confrontation with the condition, a representation of that which is bothering the patient is created. This representation does not always coincide with medical knowledge. Sometimes it represents stereotypical knowledge on the illness, sometimes it is created on the basis of individual, non-representative cases. In as uncertain a situation as suffering the condition undoubtedly is, there is a natural need to organise all of the information on the condition, its type, what the patient should do, and what future prospects are. According to Leventhal's [1] theory, what people wish to know about their disease is its identity (symptoms, and the labels given them), cause (what caused my illness), consequences (how the condition will affect my life), timeline (how long I will be ill and whether this is a chronic disease and cyclical in nature), curability (whether it is possible to cure it, and how, and whether I am in good hands: physician; treatment centre), and controllability (what influence I have on the disease and whether my behaviour, e.g. lifestyle, affects its course).

The studies show that IR has an influence on the seeking of medical help, the following of doctor's orders, and adaptation to a chronic disease [2–4]. IR is dynamic and changes together with the inflow of new information. It is based on the disease model, knowledge, experience, and information gained from other people held by a given person. The emotional response and behaviour of a patient depend on cognitive illness representation [5]. The model based on Leventhal's theory has been tested on many chronic diseases. The results show that identification of a patient's beliefs about a disease

and treatment makes it possible to obtain a greater insight into adaptive and non-adaptive responses to the disease [6]. Physicians very often focus on medical test results, ignoring a patient's beliefs about his/her own condition. Learning these beliefs enables a patient to be assisted in changing them into those favouring healing.

The subject of this study will be IR in patients suffering from RA. Rheumatoid arthritis (RA) is a chronic inflammatory disease of autoimmune origin involving primarily small and middle-sized joints, which can affect as well various internal organs (lungs, heart, vessels, haematopoietic system), nervous system, eye and skin. It is characterized by the inflammation of joint synovium which invades and causes destruction of all the joint structures including cartilage and subchondral bone and leads to bone erosions. The disease causes symmetrical involvement of multiple joints and manifests itself with joint pain, stiffness, swelling, loss of function and eventually fixed deformations. It affects primarily the joints of hands and feet, but all the joints can be involved. The disease often leads to the limitations of everyday functioning and to important disability [7].

Rheumatoid arthritis has a chronic, progressive course and is characterized by disease flares. It brings about further complications such as cardiovascular morbidity, infections and secondary neoplasms related to the disease itself and its treatment and shortens the life span of patients of approximately 7 years. It has great impact on patients quality of life because is associated with chronic pain, limitations of physical, social, occupational and sexual functioning. The disease is characterized by clinical heterogeneity and its

course is highly variable – from mild, self-remitting to aggressively progressing and highly destructive process. The disease course is often difficult to predict, but some factors as multiple joint involvement, refractory inflammation, presence of certain biomarkers and pace of disability progression have some prognostic value. Clinical picture is variable – most patients have insidious onset of slowly progressive arthritis, others have acute onset with systemic manifestations, fever, fatigue and weight loss. Patients experience pain which is most intense in the early morning, increases with long lasting immobility and improves with exercise. Pain and swelling may last several hours or days or be constant. The other problem associated with RA is persistent fatigue. Symptoms are reversible with different treatment strategies, effective treatment can cause remission of symptoms and enable normal functioning [7].

The main ailment of which patients with RA complain is pain, but also fatigue, sleeping difficulties, joint stiffness, and loss of strength [5]. Apart from limited activity, patients suffering from RA are bothered by their dependence on other people [8]. Fatigue in those with RA is also caused by their sleeping problems. About 50% of patients suffering from RA experience such difficulties [9], the frequency of which depends on the stress perceived [10]. People with RA often take antidepressants, not for depression, but in order to improve quality of sleep [10]. Nevertheless, patients suffering from RA often experience lowered mood. A review of study conducted by A. Groarke et al. [11] indicates that in patients with RA depressive states occur more often than on average in the population. The studies conducted so far do not unambiguously confirm a relationship between the advancement of the disease and lowered mood in a patient suffering from RA. The studies applying objective clinical indices of illness severity demonstrated dependencies of little significance. In Groarke's [11] study two objective indices (ESR and joint involvement) were not connected with depressive mood. The results of the study suggest that the symptoms of depression observed in patients suffering from RA are not directly connected with the physical condition of the body. The impact of RA on mood is mediated by other social and psychological factors. It seems that subjective illness representation is more important in understanding the reasons for a patient's bad mood.

The significance of multidimensional IR created by a patient is also confirmed by studies conducted by Treharne et al. [12]. They examined the relationship between the fatigue commonly felt by patients suffering from RA and IR, illness duration, and laboratory indices of illness severity

(erythrocyte sedimentation rate, ESR). The study shows that on the basis of illness duration it was impossible to predict how severe a fatigue would be felt by study participants after a year. In previous studies the relationship between illness duration and fatigue was also unclear. Some of the studies proved that it was more severe in patients suffering for many years [13], in others fatigue was more severe in patients recently diagnosed with RA [14]. In the studies carried out by Treharne et al. [12] it transpired that biological inflammatory markers were very slightly correlated with fatigue. On the other hand, fatigue could have been predicted on the basis of the elements of the condition: the severity of consequences and patient control over the course of the illness. Those patients who believed that the consequences of the condition were severe and uncontrollable suffered from more severe fatigue a year later irrespective of illness duration and drugs administered. Perception of illness consequences has, according to Treharne et al., a very significant impact on physical and mental state.

The study above confirms the significant role of psychological factors in determining state of health. State of health is understood as the physical and mental well-being of an individual. Since the relationship between the objective indices of illness severity (radiographic measure of joint damage and biochemical markers of auto-immune activity) and pain and emotional distress is weak [5], the researchers suggest that in order to understand RA it is better to employ a biopsychosocial health model.

The aim of this study is to examine the relationship between IR and self-assessment of disability level. The study focuses particularly on factors responsible for emotional distress (anger, fear, sadness, anxiety) in those suffering from RA.

Material and Methods

HAQ-DI

The study applied Fries's HAQ-DI (Health Assessment Questionnaire Disability Index and Pain Scale) [15]. Health assessment questionnaire (HAQ) is a tool designed to the assessment of the functional disability and pain in patients with arthritis. The questionnaire is a form of patient self-assessment and concerns the ability of the patient to perform daily activities. The questionnaire has eight sections on difficulties experienced within the last week with dressing, rising, eating, walking, hygiene, reach, and grip, and other daily activities such as shopping and cleaning. The patient assesses whether he/she conducts these activities with no difficulty, with some difficulty, with great difficulty

or is unable to do them. The patient records also whether any aids/devices and/or another person are needed in order to carry out a given activity. Additionally, a pain scale was included, with the patient asked to place a mark on a line 10 cm in length indicating the severity of the RA-related pain felt in the past week. The final value of HAQ is determined by both disease activity (the actual intensity of inflammation, manifesting with pain, swelling, stiffness and limited motion) which is a reversible component, and fixed damage – which is irreversible [16].

IPQ-R

To examine illness representation IPQ-R (The Revised Illness Perception Questionnaire) [2] was adapted to Polish conditions. The questionnaire has three parts, as does the original version. The first relates to a symptom identification scale. The scale included 14 commonly-occurring symptoms proposed by the authors of the method (chronic pain, fatigue, headaches, sleeping problems etc.) and five unique to RA, this complying with the conception of the authors of the scale. The study participant was to indicate whether a symptom is present and whether it is connected with RA.

The second part includes 38 questions forming seven subscales: timeline (acute/chronic) – 6 questions; consequences – 6 questions; personal control – 6 questions; treatment control, meaning the ability to manage the illness through treatment – 5 questions; illness coherence – 5 questions; timeline cyclical – 4 questions; emotional representations – 6 questions. The study participant was to mark to what extent he/she agrees with the state-

ments on the five-item scale (from strongly disagree to strongly agree).

The third and final part of the questionnaire concerns the causes of the illness. The study participant was to mark to what extent, in their opinion, each of the 18 possible causes given (stress, hereditary, a germ or virus, diet, chance or bad luck, poor medical care in my past, pollution, my behaviour, my mental attitude, family problems or worries, overwork, my emotional state, ageing, alcohol, smoking, accident or injury, my personality, and altered immunity) was the cause of their RA. The answers were also given on the five-item scale (from strongly disagree to strongly agree).

Study Participants

The study involved 88 people with diagnosed RA. The study participants were female patients hospitalised at the Department of Rheumatology and Internal Diseases of the Academic Teaching Hospital in Wrocław, as well as female patients of the day-care department. The women participating in the study were aged 24–86. The average age was 57 years.

Results

As demonstrated in Figure 1, a significant majority of study participants perceived their illness as severe (84%), and chronic with a cyclical course (77%). A majority (68%) of those suffering from RA have no illness coherence and are in emotional distress. As many as 86% of them believe that medicine will be efficacious in combating their

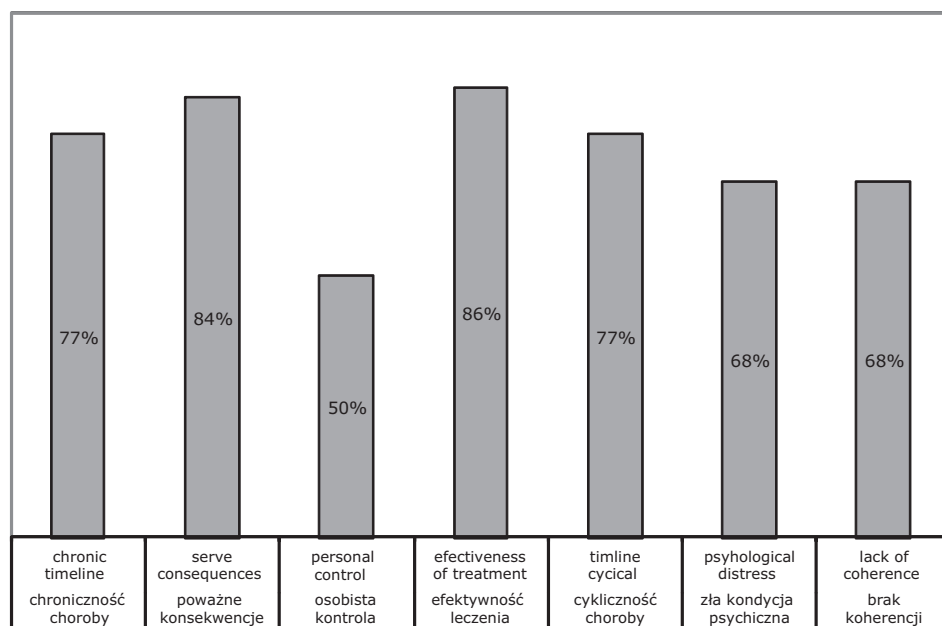


Fig. 1. Illness representation in patients with RA. N = 88

Ryc. 1. Obraz własnej choroby u chorych na r.z.s. N = 88

condition, although only 50% of them know how to influence its course through their behaviour.

Table 1 shows correlations between IPQ-R subscales. The least correlated with other IR dimensions were cyclical course and illness coherence. The belief that the illness occurs cyclically positively correlated with belief in personal control ($r = 0.236$) and belief in treatment efficacy ($r = 0.329$). Belief that it is a chronic disease ($r = 0.255$) and better mood ($r = -0.363$) were accompanied by illness coherence. Emotional representation correlated positively with number of ailments ($r = 0.378$), belief that the disease is chronic ($r = 0.289$), and consequences ($r = 0.550$), and negatively with treatment efficacy ($r = -0.365$) and illness coherence ($r = -0.363$). The mood of patients with RA deteriorates with lack of coherence, number of ailments, and belief that the disease is severe and chronic and that treatment will not be efficacious. Participants who are convinced that the illness is severe ($r = -0.387$) and chronic ($r = -0.347$), who

suffer from numerous ailments ($r = -0.352$), and who are in a worse mood ($r = -0.365$) are less likely to believe in treatment efficacy. On the other hand, belief in treatment efficacy positively correlates with belief in personal control ($r = 0.321$) and cyclical course ($r = 0.329$). The conviction that the illness has many negative consequences for a patient and his/her family is related to belief that the disease is chronic ($r = 0.420$), a large number of ailments reported ($r = 0.591$), emotional distress ($r = 0.550$), and lack of faith in treatment efficacy ($r = -0.387$).

Immune disorders and overwork occupied first place among the reasons for falling ill with RA indicated by the study participants. As many as 59% believe that immune disorders and overwork are one of the causes of their falling ill. Insufficient medical care in the past (52%) was second, and occurrence of a disease in family and stress (50%) were third. Reasons chosen from the list were coincidence (46%), bacteria and viruses, psychological

Table 1. Correlation between IPQ-R subscales. N = 88

Tabela 1. Korelacje między podskalami IPQ-R. N = 88

	Acute/chronic timeline (Chroniczność/ostrość choroby)	Consequences (Konsekwencje choroby)	Personal control (Kontrola nad chorobą)	Treatment control (Efektywność leczenia)	Cyclical timeline (Cykliczność choroby)	Emotional representations (Emocjonalna reprezentacja choroby)	Identity (Liczba dolegliwości)
Consequences (Konsekwencje choroby)	0.420**						
Personal control (Osobista kontrola nad chorobą)	-0.029	-0.132					
Treatment control (Efektywność leczenia)	-0.347**	-0.387**	0.321**				
Cyclical timeline (Cykliczność choroby)	0.181	-0.034	0.236*	0.329**			
Emotional representations (Emocjonalna reprezentacja choroby)	0.289**	0.550**	-0.066	-0.365**	-0.040		
Identity (Liczba dolegliwości)	0.436**	0.591**	-0.150	-0.352**	0.055	0.378**	
Illness coherence (Koherencja z chorobą)	0.255*	-0.120	0.029	-0.061	-0.040	-0.363**	-0.048

** Correlation is significant at the level of 0.01 (bilaterally).

* Correlation is significant at the level of 0.05 (bilaterally).

** Korelacja jest istotna na poziomie 0,01 (dwustronnie).

* Korelacja jest istotna na poziomie 0,05 (dwustronnie).

Table 2. Correlation between HAQ-DI subscales. N = 88**Tabela 2.** Korelacje między podskalami HAQ-DI. N = 88

	Dressing (Ubie- ranie)	Arising (Wsta- wanie)	Eating (Jedze- nie)	Walking (Cho- dzenie)	Hygiene (Higie- na)	Reach (Sięga- nie)	Grip (Chwy- tanie)	Activities (Codzienne czynności)
Arising (Wstawanie)	0.431**							
Eating (Jedzenie)	0.342**	0.284**						
Walking (Chodzenie)	0.093	0.517**	0.237*					
Hygiene (Higiena)	0.324**	0.346**	0.363**	0.312**				
Reach (Sięganie)	0.364**	0.254*	0.297**	0.273*	0.405**			
Grip (Chwytnie)	0.349**	0.377**	0.080	0.047	0.227*	0.510**		
Activities (Codzienne czynności)	0.473**	0.700**	0.323**	0.443**	0.417**	0.535**	0.418**	
Pain (Ból)	0.256*	0.358**	0.263*	0.356**	0.295**	0.301**	0.208	0.372**

** Correlation is significant at the level of 0.01 (bilaterally).

* Correlation is significant at the level of 0.05 (bilaterally).

** Korelacja jest istotna na poziomie 0,01 (dwustronnie).

* Korelacja jest istotna na poziomie 0,05 (dwustronnie).

attitude, family issues and others, pollution of the environment (41%), bad mood (34%), age (25%), personal behaviour (23%), and personality (16%). The lowest numbers of study participants indicated an accident or injury (9%), alcohol (7%), and cigarettes (5%) as a possible cause.

Table 2 presents correlations between limitations in performing various daily activities as assessed by the patients. Most subscales are correlated with each other. The least correlated scale was that for gripping.

There were a good many correlations between IR elements and limitations in daily activity measured by HAQ-DI (Table 3). The subscale which to the largest extent correlated with all impediments to activity and the overall result of HAQ-DI was that for consequences perceived. Higher results obtained on HAQ-DI, meaning a worse subjective state of health index, positively correlates with belief that the illness is serious ($r = 0.586$) and will last for a long time ($r = 0.257$), emotional distress ($r = 0.409$), and number of ailments ($r = 0.554$), whereas it correlates negatively with belief in treatment efficacy ($r = -0.452$) and illness coherence ($r = -0.257$). It is worth paying attention to the pain subscale. Subjective feeling of pain in the past week increases together with number of reported ailments ($r = 0.421$) and belief that the illness is serious ($r = 0.413$). Subjective pain weakens with the strengthening of belief that the treatment will be efficacious in combating the illness ($r = -0.377$), belief that the course of the illness can be controlled ($r = -0.241$), belief that the patient knows

and comprehends his/her illness ($r = -0.227$), and belief that the illness occurs cyclically ($r = -0.334$). The dimensions of IR least related to subjectively assessed limitations in activity were personal control and cyclical nature. These two IR dimensions seem independent of subjective state of health.

In order to identify which of the examined variables may be negative mood predictors in patients with RA, linear regression was employed. The regression was carried out with use of the backward method. The model included self-assessment of movement and activity restrictions (HAQ-DI), severity of pain in the last week, number of reported ailments associated by the study participants with RA, age, consequences, acute/chronic timeline, personal control, treatment control, cyclical timeline, and illness coherence. It transpired that only IR elements were significant emotional state predictors. Together they explained 43% of result variance ($F = 17.137$; $p < 0.001$). Emotional distress of patients suffering from RA may be predicted on the basis of lack of illness coherence ($\beta = -0.374$), belief that the illness is severe and has numerous consequences ($\beta = 0.362$), and belief that treatment will not be efficacious in combating RA ($\beta = -0.190$).

Discussion

The results of the studies confirm the relationship between the disability indicators assessed by HAQ and IR in those with RA. Patients report-

Table 3. Correlations between IPQ-R and HAQ-DI. N = 88**Tabela 3.** Korelacje pomiędzy IPQ-R i HAQ-DI. N = 88

	Dressing (Ubie- ranie)	Arising (Wsta- wanie)	Eating (Jedze- nie)	Walking (Cho- dzenie)	Hygiene (Higie- na)	Reach (Sięga- nie)	Grip (Chwy- tanie)	Activities (Codzienne czynności)	Pain (Ból)	HAQ- -DI
Acute/chronic timeline (Chroniczność/ostrość choroby)	0.221*	0.061	0.222*	0.167	0.365**	0.309**	0.069	-0.032	0.121	0.257*
Consequences (Konsekwencje choroby)	0.355**	0.326**	0.229*	0.346**	0.531**	0.513**	0.392**	0.254*	0.413**	0.586**
Personal control (Osobista kontrola nad chorobą)	-0.189	-0.072	-0.188	0.284**	-0.057	-0.078	-0.129	-0.170	-0.241*	-0.128
Treatment control (Efektywność leczenia)	-0.337**	-0.293**	-0.405**	-0.172	-0.374**	-0.304**	-0.150	-0.316**	-0.377**	-0.452**
Cyclical timeline (Cykliczność choroby)	-0.153	-0.111	-0.114	-0.084	0.003	-0.079	0.034	-0.115	-0.334**	-0.145
Emotional representations (Emocjonalna repre- zentacja choroby)	0.209	0.229*	0.230*	0.370**	0.422**	0.384**	0.117	0.121	0.313**	0.409**
Identity (Liczba dolegliwości)	0.318**	0.248*	0.198	0.298**	0.432**	0.432**	0.418**	0.343**	0.421**	0.554**
Illness coherence (Koherencja z chorobą)	0.001	-0.177	-0.208	-0.243*	-0.192	-0.179	0.003	-0.308**	-0.227*	-0.257*

* Correlation is significant at the level of 0.05 (bilaterally).

** Correlation is significant at the level of 0.01 (bilaterally).

* Korelacja jest istotna na poziomie 0.05 (dwustronnie).

** Korelacja jest istotna na poziomie 0.01 (dwustronnie).

ing more difficulties in performing daily activities have far more negative illness representation. High assessment by a patient of his/her own disability is related to belief that the condition is severe and will last for a long time, a worse mood, a greater number of ailments reported, a lesser belief in treatment efficacy, and lack of understanding of the illness. Both the HAQ-DI and IPQ-R scales seem to measure the same: the subjective state of a patient's health. Both scales may be useful in medical practice for the purpose of comparison with objective inflammation markers. Both provide slightly different information on the patient. The way in which a patient reacts to his/her illness is often determined not by objective state of health, but by what the patient thinks about the illness. It is therefore important to learn of the subjective assessment of state of health.

Most people with RA participating in this study thought that the illness was chronic and cyclical in nature, which conforms with the clinical image of RA. A straight majority of the study participants defined their illness as severe. The fact that seriousness of consequences positively correlated with ability to

carry out daily activities proves the rationality of the assessment of illness progress in study participants.

It is very optimistic that the vast majority of those suffering from RA positively assess the ability of medicine to combat their condition, and believe in its efficacy. The lack of coherence, that is, understanding of the illness, and the emotional distress in almost 70% of the study participants are definitely less optimistic. These two facts and the fact that only half of the study participants know means by which symptoms may be alleviated and recurrences prevented indicate the area and direction of future therapeutic work with a patient suffering from RA.

Researchers emphasise the significance of belief in one's own influence on the course of the illness, or personal control [4]. The belief that I have an influence is related to more adaptive behaviour during the illness. Those patients not treated regularly believe that they have less control over the course of the illness than patients treated regularly [17]. The belief in greater personal control is related to higher assessment of quality of life [18]. This study shows that belief in control over the course of the

Table 4. Predictors of emotional representations in patients suffering from RA – linear regression by use of the backward method. N = 88**Tabela 4.** Predyktory kondycji psychicznej u chorych na r.z.s. – regresja liniowa metodą eliminacji wstecznej. N = 88

	β	t	Statistical significance (Istotność)
Illness coherence (Koherencja z chorobą) (IPQ-R)	-0.374	-4.292	0.001
Consequences (Konsekwencje choroby) (IPQ-R)	0.362	3.748	0.001
Treatment control (Efektywność leczenia) (IPQ-R)	-0.190	-2.099	0.05

adj. $r^2 = 0.43$ $F = 17.137$

* Model presents the final solution.

* Model prezentuje ostateczne rozwiązanie.

illness is accompanied by faith in treatment efficacy and the cyclical nature of illness intensification. The belief that lifestyle and behaviour influence the development of the illness should be supported in patients. They should also be taught methods of influencing their own health, since the feeling of self-control negatively correlates with the feeling of pain.

In examining the relationships between various IR elements, it is worth noting with what belief in treatment efficacy is related. Studies conducted on diabetes sufferers shows that this is an extremely important factor which determines regularity of treatment [17]. In this study the participants with a more positive outlook on life and less fear and insecurity caused by RA believe more in treatment efficacy. Belief in treatment efficacy is also related to the conviction that the illness does not have serious consequences and will last a short time or is cyclical in nature. Although the conviction that the illness will last a short time is false, for RA is a chronic disease, the fact is that it does have a cyclical nature. Belief in the cyclical intensification of illness symptoms should be supported since, as the above results indicate, it may strengthen faith in treatment efficacy. Trust in treatment and its efficacy are important as they affect patient engagement in the treatment process, e.g. the following of a doctor's orders or participation in motor rehabilitation.

Worthy of note are the study results concerning the feeling of pain. The research shows that the subjective feeling of the discomfort that is pain is modified by a patient's thoughts and feelings [19]. The feeling of discomfort is influenced by sensations of both the body and the mind. Numerous relationships between pain and the cognitive and emotional elements of IR were observed in this study. Some may result from the advanced stage of the illness, e.g. high correlation of pain with number of ailments reported or severity of consequences perceived. A result of the study which

appears interesting is the fact that subjective feelings of pain decrease together with understanding of what the illness entails and the feeling of personal control over the course of the illness. These results show that those patients who understand their illness and who are convinced of the influence their behaviour has on deterioration or improvement of the state of their health report less pain. This result conforms to the trend in the psychology of health indicating the role played by a sense of control over a situation in the feeling of pain. The studies explicitly demonstrate that mere knowledge of the course of the illness and the accompanying feelings of pain may reduce these feelings [20]. Cognitive behavioural therapy practiced with chronic patients confirmed its efficacy in the reduction of feelings of pain [19]. This therapy is based on the assumption that efficacious pain control requires that not only pain syndromes be taken into account, but also an understanding of the patient's thoughts and feelings. Belief in one's own efficacy in alleviating the symptoms of an illness and combating it is also significant. Since those convinced that they can influence the course of an illness efficaciously report less pain and less disability [21], it seems reasonable to teach self-efficacy in combating the condition. The ideal situation would be one in which each person suffering from an illness involving chronic pain was able to participate in such therapy, yet most often only a discussion with a physician is available. The result obtained regarding the relationship between the feeling of pain and the understanding of a disease and a sense of personal control over its course indicates subjects worth discussing with a patient.

A review of the studies conducted by Pimm and Weinman [5] demonstrates that a very significant factor in improper adaptation to RA is the painting of a gloomy picture of one's own future. Many participants in this study complained of a bad mood and marked answers pointing to worry, insecurity, and fear related to RA. The results of regression

analysis show that emotional distress in those suffering from RA can be best predicted on the basis of lack of illness coherence, expectation of many negative consequences for the patient and his/her family, and lack of belief in treatment efficacy. As in the work of Murphy et al. [22], IR elements are responsible for emotional state. In predicting emotional distress, number of reported ailments connected with RA, self-assessment of disability, and pain are not as significant as understanding of the illness, assessment of consequences, and belief in treatment efficacy. In seeking the sources of negative mood in those with RA, it is better to refer to IR elements than to self-assessment of disability.

Due to the fact that RA is a chronic disease, factors determining adaptation to the illness are of the utmost importance. Good adaptation to the illness depends on the subjective image a patient has of his/her disability and illness. It is important how a patient feels about his/her influence on the course of the illness, assesses the progress of the

illness, and copes emotionally with the restrictions connected with RA in daily activity. The studies of Petrie et al. [23] showed better functioning of patients following intervention in change to an unfavourable image of illness representation. It is thus very important for a physician to learn the IR of a patient. The results of this study are similar to those of previous studies and show the necessity of patient education. Some patients will require work with a psychotherapist. What is required from a physician is assistance of patients in understanding various aspects of the disease, such as illness aetiology, predicted course, and management of symptoms, meaning ability to influence the course of the illness through behaviour. This education should not be a single event, but should accompany the entire treatment process. The task of the physician is to encourage patients to ask questions and express their opinions on the state of their health and their fears, as well as to assist in reconstruction of non-adaptive beliefs.

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