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Cognitive appraisal of illness versus expectations towards doctors and health-related behaviours in individuals with short- and long-standing diagnosis of type 2 diabetes

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Abstract

Introduction: Patients with diabetes need to be actively involved in the treatment process, i.e. treatment regimens and regular health check-ups. The aims of the study were to assess the profiles of illness cognitive appraisals in individuals with type 2 diabetes, and to recognize the relationships between illness cognitive appraisals and both expectations towards doctors and readiness to health-related behaviours.

Materials and methods: A total number of 99 participants with type 2 diabetes were divided into short- and long-standing diagnosis sub-groups. Illness-Related Appraisals Scale, The Patient Requests Form, Health-Related Behavior Inventory were administered.

Results: The comparison of most representative profiles showed significant differences between sub-groups in perceiving the illness as threat, benefit, obstacle/loss. In both sub-groups, treating the illness as a benefit determined patient's expectations of emotional support from doctors. In patients with long-standing diagnosis also threat, value, obstacle/loss and harm impact significantly on the patients' expectations towards doctors. Treating the illness as a challenge explained about 24% of variability of eating habits and 29% of preventive behaviours.

Conclusions: Participants with long-standing diagnosis treat their illness as threatening and disturbing. In these patients many dimensions of cognitive appraisal are related to seeking information about the illness and to a need of emotional support from doctors. On the contrary, in individuals with short-standing diagnosis, only perceiving their illness as a benefit is associated with the expectation towards their doctors to provide emotional support and explanation of the illness. Our study proved that perceiving the long-lasting illness as a challenge contributes to readiness to follow health-related behaviours.

Keywords: type 2 diabetes, health-related behaviour, attitude to illness

Streszczenie

Wstęp: Rozpoznanie cukrzycy stawia przed pacjentem wymagania związane z koniecznością dokonania istotnych zmian w dotychczasowym stylu życia oraz zachowania systematyczności leczenia i regularnej, wieloletniej kontroli stanu zdrowia. Celem badań było oszacowanie profili poznawczej reprezentacji choroby u osób z cukrzycą typu 2 oraz ocena relacji między sposobem postrzegania swojej choroby a oczekiwaniami względem lekarza i podejmowaniem aktywności prozdrowotnej przez chorych.

Materiał i metody: Przebadano 99 pacjentów z cukrzycą typu 2, którzy zostali podzieleni na dwie grupy: z krótkim i długim czasem od diagnozy. Zastosowano: Skalę Oceny Własnej Choroby, Listę Oczekiwań Pacjenta, Inwentarz Zachowań Zdrowotnych.

Dyskusja: Porównanie najbardziej reprezentatywnych profili wykazało istotne różnice między badanymi grupami w sposobie postrzegania własnej choroby jako zagrożenia, korzyści i przeszkody/straty. W obu badanych grupach stwierdzono, że traktowanie własnej choroby przez pacjenta jako korzyści determinuje oczekiwania emocjonalnego wsparcia ze strony lekarza. U osób z długim czasem od rozpoznania również traktowanie choroby jako zagrożenia, wartości, przeszkody/straty lub krzywdy miało wpływ na oczekiwania pacjentów względem lekarzy. Traktowanie choroby w kategoriach wyzwania wyjaśniało około 24% zmienności w zakresie nawyków żywieniowych oraz 29% w odniesieniu do zachowań prozdrowotnych.

Konkluzje: Pacjenci długo chorujący traktują swoją chorobę jako zagrażającą i utrudniającą codzienne funkcjonowanie.

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U tych osób wiele wymiarów poznawczego ustosunkowania do choroby jest związanych z poszukiwaniem informacji o chorobie i wsparcia emocjonalnego od lekarzy. U osób z krótkim czasem od diagnozy tylko traktowanie choroby jako korzyści jest związane z formułowanymi wobec lekarza oczekiwaniami emocjonalnego wsparcia oraz wyjaśnienia choroby. Postrzeganie trwającej od długiego czasu choroby jako wyzwania w sposób istotny przyczynia się do realizowania zachowań służących zdrowiu.

Słowa kluczowe: cukrzyca typu 2, zachowania prozdrowotne, ustosunkowanie do choroby

Introduction

Patients with chronic diseases such as diabetes are faced with a need to be actively involved in the treatment process, and to systematically cooperate with the doctor, to adapt to treatment regimens and do regular health check-ups. Health-related behaviours should incorporate e.g., keeping a diet, self-monitoring or improving health literacy related to diabetes and its treatment [1-5]. In type 2 diabetes, patients hold the principal responsibility for the management of their illness. However, clinicians' experiences suggest that individuals with diabetes encounter substantial difficulties to follow doctor's recommendations [6,7]. The patient-centred approach demands paying attention to patients' specific needs and problems, which may contribute to patients' greater involvement in the treatment process [8-11]. Adaptation to a chronic illness is dynamic and linked to the objective characteristics of the ongoing disease process and the individual features of the patient [4,12-16]. One of the crucial factors affecting the way of coping with illness is the patients' cognitive appraisal of the problem [17]. The patients employ cognitive schemata (information filters) linked to health, illness and treatment, and these determine what use they make of the available information, by rejection, acceptance or distortion [8]. Subjective perception of the illness may change as the disease progresses, relative to the processing and coding of the information about one's health status. This information comes from various sources, both external and internal experience or self-observation. Cognitive appraisal consists of primary and secondary processes [18]. Primary cognitive appraisal involves an interpretation of the situation of being ill as threatening, challenging, gratifying, harming, or frustrating. Perception of illness as harm and/or loss is based on stressful experiences that have already occurred; a sense of threat relates to anticipated harm/loss. Illness is perceived as a challenge if the patient believes that the threat can potentially be overcome [19,20]. Secondary cognitive appraisals are connected with seeking a response to the demands of the situation, and ways to develop better adaptation [21-23]. These secondary processes are intended to evaluate the coping resources and options, and they aim to identify to what extent the situation can be changed or whether more information is required [19].

Considering an effect of the disease dynamics on illness-related cognitive appraisals, the factors taken into account in our research included the time from the diagnosis. The first aim of the study was to investigate illness-related cognitive appraisal in individuals with type 2 diabetes with short- and long-standing diagnosis. By reference to the theory of Lazarus and Folkman [18], we sought to identify the differences between the most typical profiles of illness-related cognitive appraisal at different time points from the diagnosis. We also hypothesized that the experience of the disease and individual's specific cognitive appraisal of the disease affect the patients' coping and care-seeking behaviours [7]. Hence, another purpose was to evaluate to what extent the individual dimensions of cognitive appraisal of the disease determine expectations towards doctors and readiness for health-related behaviours in patients at different stages of the disease.

Methods

Participants

The study comprised ninety-nine outpatients with type 2 diabetes. All the patients were using oral antidiabetic drugs and the treatment did not include insulin replacement therapy. Exclusion criteria included: a history of neurological problems secondary to central nervous system dysfunction, hormonal disorders, mental health treatment and addictions. The mentioned criteria were recognized by reviewing patients' medical records and extended interview carried out with each patient and their next of kin living in the same household. The Abbreviated Mental Test [24,25] was administered to include patients with no dementia (at least 9 points).

Fifty individuals were enrolled to long-standing diagnosis group (LDD; M = 16.63 years; SD = 6.10) and 49 participants to short-standing diagnosis one (SDD; M = 4.04 years; SD = 1.78). There were no significant differences in age (M_{SDD} = 63.63, SD_{SDD} = 9.73; M_{LDD} = 64.57, SD_{LDD} = 11.00; t = -0.451, p = 0.653) and in educational level (M_{SDD} = 12.13, SD_{SDD} = 2.93; M_{LDD} = 12.29, SD_{LDD} = 3.44; t = -0.26, p = 0.79) between the groups.

Measures

Illness-Related Appraisals Scale (SOWCh) is a self–report scale addressing a number of illness-related cognitive appraisal dimensions: Threat, Benefit, Obstacle/Loss, Challenge, Harm, Value [26]. The SOWCh has a control subscale, which tests the general importance that respondents attach to their own illness. Participants, using a 5-point Likert scale, described to what extent the presented statements agree with their experience of an illness. The SOWCh subscales showed consistent reliability (Cronbach's alpha ranging from 0.64 to 0.87).

Patient Requests Form (PRF, Polish adaptation by Juczyński [27]) was administered. The items form three areas of expectations towards doctors: the explanation of the disease (ExD), seeking emotional support (EmS), and obtaining information on examinations and treatments (Inf). The PRF scale has been validated among patients with good reliability (Cronbach's alpha = 0.88).

Health-Related Behavior Inventory (IZZ) was used to assess intensity of health-related behaviours: proper eating habits (EatH), preventative behaviours (PrevB), health practices (HPr), positive mental attitude (PoAt) [27]. The IZZ scale demonstrated good reliability (Cronbach's alpha = 0.85).

Statistical analysis

Statistical analyses were performed with SPSS software (version 26.0). At the early stage of our procedure cluster analyses were applied using the k-means method (for SDD group k = 3 and for LDD group k = 3) in order to extract patients with the most typical profiles of illness-related cognitive appraisal for short- and long-standing diagnosis separately. Participants from the largest sub-groups (the most typical profiles of illness-related cognitive appraisal) named SDDt and LDDt were compared with the Student's t-test.

In order to determine the correlations between the cognitive appraisals of illness and PRF or IZZ scores, the Pearson's correlation coefficient was estimated for SDD and LDD groups. Regression analysis was performed to search for predictors of PRF and IZZ scores. Statistical significance was set at 0.05 for all analyses.

Results

The comparison of the most typical profiles of illness-related cognitive appraisals in short- and long-standing diagnosis

The first step of the analysis was to characterize the most typical profiles of cognitive appraisal of diabetes in patients with short- and long-standing diagnosis. The basic criterion for identifying individual clusters was the score corresponding to illness-related cognitive appraisal categories. Cluster analysis cleared the path to extract the most typical profiles of illness-related cognitive appraisals in SDD and LDD groups. The results of cluster analysis are presented in Table 1.

Table 1. Results of cluster analysis (k-means method)

Dimensions of illness-related cognitive appraisal	Short-standing diagnosis (SDD)				Long-standing diagnosis (LDD)			
	cluster 1 (n = 32)	cluster 2 (n = 13)	cluster 3 (n = 4)	F (p)	cluster 1 (n = 11)	cluster 2 (n = 26)	cluster 3 (n = 13)	F (p)
Threat	25.44	35.00	22.75	11.710 (0.001)	35.00	33.27	19.15	48.794 (0.001)
Benefit	12.97	15.62	26.25	17.854 (0.001)	18.73	16.08	11.15	6.921 (0.002)
Obstacle/Loss	16.44	31.31	27.50	48.478 (0.001)	27.45	26.54	15.31	19.781 (0.001)
Challenge	21.94	25.23	14.75	8.106 (0.001)	20.09	23.42	20.15	2.777 (0.072)
Harm	14.47	21.00	19.50	6.478 (0.003)	29.27	15.15	10.23	82.375 (0.001)
Value	16.25	18.08	20.50	1.109 (0.339)	15.73	18.62	15.08	2.145 (0.128)
Importance	16.72	21.46	13.25	8.141 (0.001)	20.82	19.15	15.92	4.073 (0.023)

Into the further analysis the most typical profiles of SDD and LDD groups were included: the SDDt group (n = 32; 65% of the SDD group) and the LDDt group (n = 26; 52% of the LDD group; Table 2). The Student's t-test revealed that LDDt scored significantly higher than SDDt group on Threat, Benefit, Obstacle/Loss, and Importance. Patients included into the LDDt group perceive their illness as a factor of moderate importance in their lives, presenting a moderate threat, or obstacle. Nevertheless, they also see they can achieve certain gains from the fact they have a

chronic condition. Participants comprised in the SDDt group treat diabetes without attributing any crucial meaning to their illness; they present a relatively low sense of threat; they do not perceive the illness as a major obstacle to their life objectives. The differences between SDDt and LDDt did not reach the level of statistical significance on Challenge, Harm, Value (Table 2). In Figure 1, cognitive appraisals were presented as centiles in order to highlight the differences between the profiles of SDDt and LDDt groups.

Table 2. The comparison of the most typical profiles of illness-related cognitive appraisal in short- and long-standing diagnosis groups

Dimensions of illness-related cognitive appraisal	Short-standing diagnosis (SDDt; n = 32) M (SD)	Long-standing diagnosis (LDDt; n = 26) M (SD)	t (p-value)
Threat	25.44 (7.09)	33.27 (4.53)	- 4.803 (0.001***)
Benefit	12.97 (3.75)	16.08 (4.73)	- 2.308 (0.025*)
Obstacle/Loss	16.44 (4.83)	26.54 (5.94)	- 7.089 (0.001***)
Challenge	21.94 (5.04)	23.42 (4.02)	- 1.282 (0.205)
Harm	14.47 (5.35)	15.15 (4.42)	- 0.406 (0.686)
Value	16.25 (5.63)	18.62 (5.81)	- 1.390 (0.170)
Importance	16.72 (3.43)	19.15 (4.31)	- 2.093 (0.041*)

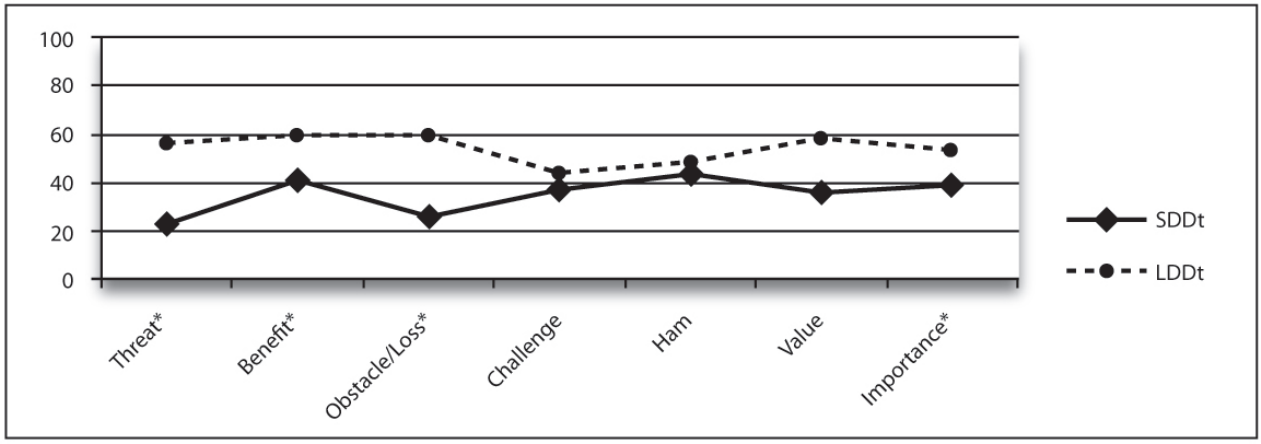

Figure 1. The most typical profiles of illness-related cognitive appraisal in short- (SDDt; n = 32) and long-standing diagnosis (LDDt; n = 26) groups

The contribution of illness-related cognitive appraisals to expectations towards doctors in short- and long-standing diagnosis

In order to determine the correlation between the cognitive appraisals and PRF or IZZ scores, the Pearson's correlation coefficient was estimated separately for the SDD and LDD groups (Table 3). A linear regression analysis was conducted in order to determine the contribution of the individual dimensions of cognitive appraisals to expectations towards doctor and readiness to undertake health-related behaviours (Table 4). In the SDD group, there were significant positive correlations between the Benefit score and two subscales of PRF: seeking emotional support and the explanation of the disease (Table 3). In the SDD group, there was a significant impact of Benefit variable on PRF EmS and PRF ExD. The Benefit dimension of SOWCh explained about 48% of total variability in seeking emotional support and 23% variability in looking to the explanation of disease (Table 4).

In the LDD group there were significant positive correlations between the Benefit or Value scores and all subscales of PRF: seeking emotional support, looking to the explanation of the disease and the information on examinations and treatments (Table 3). The regression analysis showed a significant contribution of the Benefit and Value variables to: EmS, ExD, Inf. The results revealed that about 37% of EmS can be predicted by the Benefit dimension and about 25% by the Value dimension.

Table 3. Correlations among illness-related cognitive appraisal dimensions and IZZ and PRF scores in short- and long-standing diagnosis of diabetes groups

Variables	PRF total	PRF ExD	PRF EmS	PRF Inf	IZZ total	IZZ EatH	IZZ PrevB	IZZ HPr	IZZ PoAt
Short-standing diagnosis of diabetes (SDD)									
Threat	0.17	-0.05	0.29	0.17	-0.17	-0.17	-0.11	-0.31	0.04
Benefit	0.62***	0.48**	0.69***	0.31	0.31	0.31	0.25	0.17	0.21
Obstacle/Loss	0.32	0.16	0.32	0.36	-0.08	-0.09	0.05	-.023	0.09
Challenge	-0.21	-0.19	-0.15	-0.24	0.03	0.06	-0.07	-0.09	0.32
Harm	0.27	0.21	0.35	0.06	0.13	0.12	-0.01	0.17	0.12
Value	0.09	0.02	0.21	-0.10	0.07	-0.01	0.06	-.01	0.06
Importance	0.11	-0.10	0.21	0.17	-0.02	0.05	-0.08	-0.04	-0.04
Long-standing diagnosis of diabetes (LDD)									
Threat	0.34	0.26	0.52**	0.06	0.25	0.30	0.34	0.01	0.09
Benefit	0.60***	0.51**	0.61***	0.40*	-0.01	-0.09	0.13	-0.08	-0.01
Obstacle/Loss	0.35	0.14	0.52**	0.16	0.05	0.21	0.34	-0.32	-0.11
Challenge	0.27	0.23	0.26	0.17	0.58***	0.49**	0.54**	0.34	0.36
Harm	0.37*	0.42**	0.40***	0.08	-0.19	-0.11	-0.10	-0.08	-0.26
Value	0.52**	0.46*	0.39*	0.48**	0.32	0.12	0.31	0.06	0.41*
Importance	-0.01	-0.15	0.18	-0.14	0.06	0.18	0.11	-0.15	0.05

*PRF - The Patient Requests Form: ExD - the explanation of the disease, EmS - seeking emotional support, Inf - obtaining information on examinations and treatments; IZZ - Health-Related Behavior Inventory: EatH - proper eating habits, PrevB - preventative behaviours, HPr - health practices, PoAt - positive mental attitude. *p≤0.05; **p≤0.01; ***p≤0.001.*

Table 4. The association between illness-related cognitive appraisal dimensions and PRF and IZZ scores using linear regression model

Variables	PRF ExD			PRF EmS			PRF Inf		
	β (SE)	95%CI	t (p)	β (SE)	95%CI	t (p)	β (SE)	95%CI	t (p)
		Short-standing diagnosis of diabetes (SDD)							
Benefit	0.477 (0.114)	0.088-0.555	2.822 (0.009)	0.689 (0.123)	0.356-0.861	4.946 (0.001)	-	-	-
	Long-standing diagnosis of diabetes (LDD)								
Threat	-	-	-	0.522 (0.086)	0.092-0.446	3.122 (0.004)	-	-	-
Benefit	0.505 (0.093)	0.086-0.467	2.981 (0.006)	0.606 (0.130)	0.237-0.771	3.880 (0.001)	0.399 (0.084)	0.014-0.360	2.217 (0.036)
Obstacle/ Loss	-	-	-	0.524 (0.085)	0.092-0.443	3.135 (0.004)	-	-	-
Harm	0.423 (0.063)	0.020-0.277	2.378 (0.025)	0.402 (0.096)	0.018-0.412	2.242 (0.034)	-	-	-
Value	0.455 (0.072)	0.039-0.334	2.605 (0.015)	0.392 (0.113)	0.013-0.476	2.174 (0.039)	0.484 (0.060)	0.046-0.294	2.820 (0.009)
	IZZ EatH			IZZ PrevB			IZZ PoAt		
	β (SE)	95% CI	t (p)	β (SE)	95% CI	t (p)	β (SE)	95% CI	t (p)
		Long-standing diagnosis of diabetes (LDD)							
Challenge	0.489 (0.145)	0.125-0.722	2.912 (0.007)	0.538 (0.138)	0.175-0.740	3.320 (0.003)	-	-	-
Value	-	-	-	-	-	-	0.413 (0.124)	0.038-0.547	2.357 (0.026)

PRF - The Patient Requests Form: ExD - the explanation of the disease, EmS - seeking emotional support, Inf - obtaining information on examinations and treatments; IZZ - Health-Related Behavior Inventory: EatH - proper eating habits, PrevB - preventative behaviours, PoAt - positive mental attitude.

ExD is explained in 26% by the Benefit dimension and in 21% by the Value dimension. The total variability in Inf was explained in about 15% by the Benefit dimension and in about 23% by the Value dimensions (Table 4). Positive correlations were also found between the Harm score and two PRF subscales: seeking emotional support and looking to the explanation of the disease. Regression analysis revealed the significant impact of the Harm variable on two subscales of PRF: EmS and ExD. The results revealed that about 16% of EmS and about 18% of ExD can be predicted by the Harm dimension. In the LDD group, there were significant positive correlations between the scores in Obstacle/Loss or Threat and EmS (see Table 3). The regression analysis showed a significant contribution of the Obstacle/Loss and Threat variables to EmS.

The contribution of illness-related cognitive appraisals to readiness to undertake health behaviours in short- and long-standing diagnosis

In the SDD group significant correlations between cognitive appraisals and readiness to undertake health-related behaviours were not found (Table 3). In the LDD group, scores in two dimensions of cognitive appraisals were significantly and positively correlated with IZZ. Challenge score was associated with EatH and PrevB, and Value score was correlated with PoAt (Table 3). There was a significant effect of the Challenge on EatH and PrevB. The results revealed that about 24% of EatH and 29% of PrevB can be predicted by the Challenge dimension. In this group, there was also a significant effect of the Value on PoAt, which explained about 17% of total variability in PoAt scores (Table 4).

Discussion

Patients' involvement is crucial factor for effective diabetes treatment. Our study explores the impact of detailed dimensions of cognitive attitude on patients' engagement into some aspects of therapeutic process. It is particularly important given the growing population of patients with diabetes and demands of self-care ability directed to patients.

The first aim of the study was to extract the most typical profiles of illness-related cognitive appraisal in individuals with short- and long-standing diagnosis of type 2 diabetes. The results show that participants in these sub-groups present varied profiles of cognitive appraisal. Considering the most common profiles identified in participants with short- and long-standing diagnosis, it should be noted that irrespective of the time elapsed since diagnosis, patients to a similar degree perceive their illness as a challenge. They see it as an injustice, an unfair and harmful life event, or undeserved punishment. However, compared to those with short-term experience of the illness, participants with long history of the disease attribute greater importance to their condition, perceive it as a significant disturbance to their life balance, and treat it as difficult, requiring mobilization of new adaptive mechanisms. They also tend to treat it as a greater threat, a life event which disturbs the state of balance and safety, destabilizing their current life situation, disturbing their plans for the future. It is seen as a far greater obstacle/loss from the viewpoint of their life goals, and an inevitable necessity to give up the pursuits which used to bring happiness and satisfaction. It results in loss of current opportunities and plans. Concurrently, the disease does not present any more of a challenge to them than it does to those with a short-term history of the illness. Individuals struggling with their illness for many years more commonly present a way of thinking about the disease as a situation from which they can derive certain gains. The illness can be used as an excuse allowing the person to be relieved from duties and responsibilities perceived as a burden. It can provide an opportunity to escape problems and a feeling of relief. It also allows to experience attention, and care from others. Our study supports the previous findings suggesting that cognitive appraisal plays an important role in adaptation to chronic illness. Perception of certain values in the illness is important for accepting the situation, which may lead to greater attention to the disease (its progress, treatment options) [20,28]. Our results showed that patients with long-term experience of the illness treat diabetes as more threatening and disturbing condition than those with short-standing diagnosis. It is consistent with the earlier reports referring to the dynamic character of illness-related cognitive appraisals that change as the disease progresses [4,12-16,18,21,22].

The next aim of our study was to evaluate the relationship between illness-related cognitive appraisals and expectations towards doctors in patients with short- and long-standing diagnosis. Individuals with short-standing diagnosis of type 2 diabetes, who perceive illness predominantly as a benefit, expect their doctors to provide emotional support and explanation of the illness. Notably, the benefit dimension of cognitive appraisal explained almost 48% of the total variability in seeking emotional support. On the other hand, in the case of advanced illness, the more the patients cognitively process their situation and perceive it in terms of threat, obstacle, and harm, the greater the need for emotional support from the doctor. In these patients, the need to receive emotional support from the doctor is also explained by the perception of the illness as a way to acquire certain benefits, and as an opportunity for personal development, discovery and appreciation of the values, which the person did not pay attention to earlier. Individuals with long history of illness, seeing

the disease as harm, also expect such support in making sense of the condition. Expectations formulated towards the doctor by them frequently include a need to have the illness explained, to receive information about its progress and treatment options. Thus the present findings clearly show that General Practitioners and diabetes specialists should pay greater attention to the individual needs and expectations of patients at different stages of the disease [8-11]. This way of proceeding during the diagnostic and therapeutic process may encourage patients to greater involvement and looking for constructive ways of coping with the disease.

In our further considerations we focused on the relationship between illness-related cognitive appraisals and patients' readiness to follow health-related behaviours. Our study proved that only perceiving the long-lasting illness as a challenge contributes to these eligible behaviours. The more the patients perceive their illness as a challenge, the more they are likely to follow dietary and health-related recommendations, by taking into account information about health and the disease. The results showed that perception of illness as a difficult situation in which patients must be active is connected with better self-care, which allows them to achieve more successful treatment. It stays in line with previous research showing the connection between the illness representation and health-related behaviours [19,20]. The behaviours, such as keeping a healthy diet, self-monitoring or improving health literacy, are considered to be necessary to effectively manage the illness [1-5]. The difficulties in getting patients to pay adequate attention to their disease and to comply with doctors' recommendations are reported by all professionals engaged in the therapeutic process [6,7].

The results of this study can be applied in psychological practice accompanying medical treatment. Therapy of patients with type 2 diabetes should include interventions intended to strengthen the patients' task-oriented attitude. By increasing individuals' knowledge of the disease and treatment options, patients may modify their illness-related cognitive appraisals, what may empower them to self-care and better management of the disease [19,22,23]. Although some patients have good insight into their disease as regards proper eating habits and lifestyle, they find it difficult to translate this knowledge into everyday actions [12]. In such cases, additional comprehensive care should be taken into consideration. Ensuring emotional support to the patients who need it may prove to be an important factor contributing to patients' greater engagement in health-related behaviours.

The study has some limitations. In the further studies more extended control of medical variables would be recommended. The time from the diagnosis of diabetes should not be treated as a single indicator of clinical condition. It would be worth taking into account the complications of diabetes. In detailed analyses some additional indexes of emotional functioning could be considered.

Conclusion

Individuals with short- and long-standing diagnosis of diabetes present varied profiles of illness-related cognitive appraisal. Irrespective of the time from diagnosis, all the patients to a similar degree perceive their illness as a challenge. However, the more the patients with long-standing diagnosis treat diabetes in the terms of challenge, the more they are likely to follow dietary and health-related recommendations. For patients with long history of the disease there is a distinctive tendency to attribute greater importance to the condition and to treat it as a difficult, threatening and disturbing condition. In these patients many dimensions of cognitive appraisal are related to seeking information about the illness and to a need of emotional support from doctors. On the contrary, in individuals with short-standing diagnosis only perceiving their illness as a benefit is associated with the expectation towards their doctors to provide emotional support and explanation of the illness. Emotional support to the patients who need it and modification of cognitive appraisals through increasing knowledge of the disease may contribute to better management of the diabetes.

Conflict of interest

The authors have declared no conflict of interest.

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