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Quality of life and proactive coping with stress in a group of middle adulthood women with type 2 diabetes

Abstract: *In middle adulthood the intensity of stress is significantly higher than in the preceding developmental period. This stress is particularly significant in the case of chronically ill women, including those with type 2 diabetes. In this group, the disease-related stress intensifies the difficulties generated by the decrease of age-related organismic resources and in many instances impairs the quality of life. Therefore, an ability to cope with difficult situations is of crucial importance. The aim of the research was to estimate the general level of life-satisfaction, as well as the frequency and effectiveness of proactive coping strategies in a group of middle adulthood women with type 2 diabetes compared to women not suffering from diabetes. The study was conducted with methods which have acknowledged psychometric properties (SWLS, WHOQoL – BREF, PCI) as well as a survey collecting sociodemographic data. Women suffering from type 2 diabetes are less satisfied with their prior and current life, health and the physical dimension of their lives and environment. Only partially do they employ proactive coping strategies different from those used by the women from the healthy group. For life-satisfaction in its various aspects it is particularly important for the diabetic women to more often use the strategy of reflective coping and to less often seek emotional support while using the strategy of preventive coping or avoidance. The proactive strategies directed at anticipated stress are connected with the level of life-satisfaction and considered to be health resources.*

Key words: *quality of life, diabetes mellitus type 2, proactive coping, middle adulthood*

Introduction

Health is one of the fundamental indicators of quality of life, which is reflected in a term frequently used nowadays, i.e. Health-Related Quality of Life (Schipper, 1990). The studies show that chronic non-infectious diseases, type 2 diabetes being one of them (WHO, 2011), affect patients‘ general quality of life and their satisfaction with its individual areas (Walker, 2007). According to the World Health Organization (1993) quality of life is defined as an individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. Quality of life is affected by the person’s physical health, psychological state, social relationships, independence level, and their relationship to salient features of the environment. A term which is close to quality of life is mental well-being. According to Trzebińska (2008), in the case of quality of life many factors are taken into account, whereas well-being comes down to general subjective assessment of the situation. Mental well-being is a cognitive (Andrews & Withey, 1976) and emotional assessment of one‘s own life (Diener, 1984; Pavot & Diener, 1993; Diener, Lucas & Oishi, 2004) and consists of three factors: a level of satisfaction with life, experiencing positive emotions and having no negative emotions. The first of the named factors, a cognitive one, is an overall assessment of satisfaction with one‘s own achievements and life conditions (Diener, Emmons, Larsen & Grifin, 1985). Monitoring the factors which influence the quality of life is of particular importance in the case of diseases which keep increasing in frequency in the population. Such a relationship can be noticed in the case of type 2 diabetes. It makes up about 90% of all cases of diabetes. According to International Diabetes Federation in 2014 about 3 million people in Poland suffer from diabetes, while only 2/3 of this group has been diagnosed (IDF, 2014). Among Polish women the diabetes incidence is 6% (Ostrowska, 2013). In the light of these data, it is important to search for the factors determining the quality of life of

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this group. The results indicate that these include not only clinical variables, but also socio-demographic ones. The research highlights the role of factors, such as age and a disease‘s duration (Rubin & Peyrot, 1999; Redekop et al., 2002), a significance of which is particularly visible in the group comprising women (Coelho, Amorim & Prata, 2003). The other important predictors include education, disease-related complications and methods of treatment (Redekop et al., 2002), the level of physical activity related to everyday activities performed by the sick person (Glasgow et al., 1997), dietary restrictions (Bradley & Speight, 2002), being overweight and a high level of HbA1c (Bradley & Lewis, 1990), social participation, strong family bonds and good living conditions (Koligat et al., 2012).

From the perspective of development, both physical and psychological, the period of middle adulthood is a particularly challenging time. The research concludes that this period may bring on a significant increase of stress (Oleś, 2011). It is a time of continuation of the developmental tasks undertaken in the previous phase (Newmann & Newmann, 1984). The tasks include: housekeeping, bringing up children and managing a career. In the context of completion of these tasks in middle age it is necessary for the women to: revaluate their abilities and skills, be able to make decisions and formulate goals, establish relations with other social structures as well as to change the parenting method as a result of the age of a child, change the sources of professional satisfaction, and choose optimal forms of activity ensuring self-fulfilment and further development of skills, including the interpersonal ones. Also important during this stage of life is the fact that the roles resulting from these tasks overlap, which on the one hand causes stress, on the other, may also become a source of satisfaction. The phenomenon of the overlapping roles generates greater stress and causes, especially in the case of women, an increase of negative emotions and heightened risk of health problems as well as the decrease of satisfaction with the quality of life. As the research indicates, the instance of overlapping of more than two significant roles, specifically the roles of mother, employee, wife/partner, and carer of ageing parents, is stress-inducing. It should be added that the intensification of stress strongly affects most of the spheres of life and tasks, whereas successes and satisfaction are attributed only to a particular area of life and thereby exert smaller influence on our well-being (Heckhausen, 2001). Stress may also be caused by the different and very often contradictory expectations of members of different generations. Middle-aged people act as a buffer between the wisdom of the elderly and the expansiveness of the youth. The middle-aged generation is frequently called the “sandwich generation” (Borysenko, 2003) which supports adolescent children and takes care of ageing parents at the same time. This phenomenon concerns women around their fifties the most. In effect, this situation often generates the feeling of giving more than they receive and because of that it undoubtedly affects the women’s quality of life. In Polish conditions such double responsibilities are much more burdening than in other, wealthier countries of the European Union. In the case of middle adulthood women, the changes connected with psychosomatic functioning as well as the common lack of awareness of needs and their satisfaction are factors that might become a source of stress and consequently lower the level of satisfaction with life (Bielawska-Batorowicz, 2006). The influence of vasomotoric, somatic and psychological symptoms appearing during menopause is intensified by the decrease of organismic resources brought about by ageing as well as by the negative social perception of the events occurring during the period.

In the group of women with type 2 diabetes both the developmental period (Oleś, 2011) and occurrence of a chronic disease constitute factors which generate psychological stress. For this reason, this group is particularly prone to its negative effects. According to research by DAWN 2 (Diabetic Attitudes, Wishes and Needs 2), 56.7% of diabetics in Poland suffer from severe emotional stress connected with their disease. It is therefore important to monitor ways of coping with difficult situations and verify their relevance to the quality of life of patients.

The activity undertaken by a person in a stressful situation can take different forms, just like its individual and social consequences. What has been emphasized recently is the importance of the proactive strategies of coping with difficult situations. Contrary to the reactive strategies activated after the stress-inducing factors appear, the proactive ones aim at anticipated situations. The anticipation and preparation for demanding situations lowers the tension and increases the readiness to face them. Moreover, they serve as a way of using and reinforcing resources before experiencing a difficult situation and do not eliminate stressors after they produce their effect. The proactive strategies are used in order to avoid, reduce or prevent the development of difficulties in the early phase of their appearance (Aspinwall & Taylor, 1997). They create opportunities for personal development and facilitate the creation and strengthening of resources helping to achieve personal goals (Greenglass, 2002; Schwarzer & Taubert, 2002).

A majority of research carried out in Poland, including the studies involving middle adulthood women, deals primarily with the reactive coping with stress (e.g. Bielawska-Batorowicz, 2007; Kózka, Prażmowska, Dziedzic, 2012). As shown by the studies conducted worldwide on various groups, proactive coping strategies are related to the higher level of satisfaction with life (Greenglass, 2002; Sęk & Pasikowski, 2003) as well as to subjective health indicators (Pasikowski, Sęk, Greenglass, Taubert, 2002) and positive mood (Greenglass & Fiksenbaum, 2009). Proactive strategies also proved significant in the case of overweight women coping with discrimination (Mallett & Swim, 2005). In the group of diabetic women, however, the proactive strategies prepare for a life with the disease and facilitate more effective self-control (Thoolen, deRidder, Bensing, Gorter, Rutten, 2009).

In the case of groups, who suffer from psychological stress as a result of overlapping factors, such as the developmental period and occurrence of a chronic disease, the investigation of the relationship between the health-related quality of life in the context of satisfaction with prior and present life and coping with stressful situations generated by the illness becomes particularly important. Such a relationship can be noticed in the group of middle adulthood women with type 2 diabetes. It should be noted that in the case of chronic diseases whose course is widely described in the literature, it is possible to anticipate some stressful situations, and thus prepare for their occurrence.

On account of the above-mentioned, the aim of the research was to estimate the level of satisfaction with quality of life and the frequency of proactive coping strategies as well as their importance for the satisfaction with various aspects of life in a group of middle adulthood women with type 2 diabetes, compared to women not suffering from diabetes.

Materials and methods

The research involved two groups of women. The first one (*n* = 60) included middle adulthood women suffering from type 2 diabetes (aged 45–55) while the second one (*n* = 60) included women at the same age but not suffering from diabetes. The average age in both groups was not significantly different. In the first group the average age was 49.41 (*SD* = 3.64) while in the other group it was 50.06 (*SD* = 3.86).

The selection of individuals to the criterion group was based on the snowball sampling technique (Babbie, 2004). The main socio-demographic variable which served as a basis for selection to the control group was age. In the course of selection efforts were made, however, to minimize differences in the other variables included in demographics. Analysis of the significance of differences in the distribution of socio-demographic variables in the examined groups showed that significant statistical difference concerns one variable: the number of children. ($\chi^2(4, N = 120) = 21.546$; $p < 0.001$). No statistically significant differences were apparent with respect to the other variables named in the demographics.

The study was anonymous and all the subjects consented to take part in it. Firstly, the subjects of the research filled in an original survey which collected mainly sociodemographic data. The data is presented in Table 1 below.

Table 1. Characteristics of the studied groups by percentage

The variable		Diabetic women	Non-diabetic women
Education	Primary	13.3	11.7
	Secondary	36.7	38.3
	Vocational	15.0	18.3
	Higher	35.0	31.7
Residence	City	55.0	48.3
	Town	33.3	38.3
	Village	11.7	13.4
Marital status	Married	50.0	66.7
	Partnership	10.0	8.3
	Single	40.0	25.0
Household	Living with someone	63.3	73.3
	Living alone	36.7	26.7
Number of children	None	18.3	5.0
	1 child	28.3	21.7
	2 children	35.0	43.3
	3 children	6.7	30.0
	4 children	11.7	0.0
Activity	Employed	65.0	75.0
	Unemployed	35.0	25.0

The research used the instruments possessing acknowledged psychometric properties: Satisfaction with Life Scale SWLS (Diener, Emmons, Larson, Griffin, 1985; Polish adaptation by Juczyński, 2001), WHO Quality Of Life Instrument – BREF – WHOQoL (WHO, 1998; Polish adaptation by Wołowiecka & Jaracz, 2001) and The Proactive Coping Inventory/Reactions to Daily Events Questionnaire – PCI (Greenglass, Schwarzer, Taubert, 1999; as cited in: Pasikowski et al., 2002). The first method is designed to assess global level of satisfaction with life. It consists of five items. Due to the fact that a respondent assesses the extent to which each of them refers to their prior life, it was assumed that the result of this scale reflects satisfaction with prior life. The second tool is designed to evaluate the quality of current life in the physical, psychological and social relations area as well as in the sphere of influence of the environment and the general level of satisfaction with present life and satisfaction with health. This questionnaire consists of 26 items. Due to the fact that a respondent takes a stance on the statements in relation to the last two weeks, it was assumed that the results obtained relate to the current situation. The Proactive Coping Inventory/Reactions to Daily Events Questionnaire (Greenglass, Schwarzer, Taubert, 1999; as cited in: Pasikowski et al., 2002) was used to evaluate proactive coping strategies. This method is designed to measure the following coping strategies: proactive coping, reflective coping, strategic planning, preventive coping, seeking instrumental support, seeking emotional support and avoidance. The questionnaire consists of 55 items.

The statistical analysis of the data was conducted with the use of the statistical package SPSS 21.0.

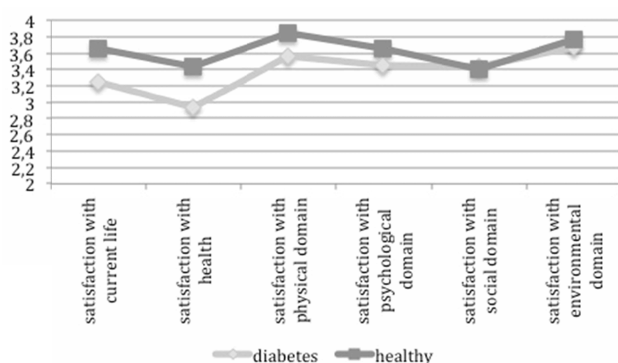
Results

In order to assess the differences between the satisfaction with prior life (measures by SWLS) of women with type 2 diabetes and the healthy women, a comparison of averages was done with the use of the Student's T-test for independent samples. The analysis showed that diabetic women are less satisfied with their prior life than the healthy women ($M_h = 4.82$; $SD_h = 1.08$; $M_d = 3.72$; $SD_d = 1.36$; $t(112.141) = -4.88$, $p < 0.001$, $d = 0.68$)[1]. Therefore their level of satisfaction with quality of life is lower.

In order to identify the differences in the level of satisfaction with quality of the current life and the current satisfaction with its particular aspects (measured by WHOQoL) as well as the differences in the frequency of using the proactive strategies (measured by PCI), two analyses of variance were conducted in the studied groups.

First of all, to verify the differences in terms of satisfaction with life an analysis was conducted of variance in a mixed scheme: 2 (group: women with diabetes *versus* healthy women) x 6 (domain: satisfaction with current life *versus* satisfaction with health *versus* satisfaction with physical domain *versus* satisfaction with psychological domain *versus* satisfaction with social domain *versus* satisfaction with environmental domain). A factor measured within the groups was the satisfaction area, whereas a factor between the individuals was membership of one of the examined groups. A dependent variable was the level of satisfaction. The data is presented in Figure 1.

Figure 1. Quality of life (satisfaction with current life measured by WHOQoL) in the studied groups



The analysis revealed the main effect of the area of satisfaction $F(5, 590) = 18.21$; $p < 0,001$, $\eta^2 = 0.134$), the main effect of the group $F(5, 118) = 8.92$; $p < 0.01$, $\eta^2 = 0.070$) and the interaction effect of the variables: the group and the area of satisfaction $F(5, 590) = 4.39$; $p < 0.001$, $\eta^2 = 0.036$.

In order to investigate the interaction effect the simple effects analysis was conducted. The analysis demonstrated a significant difference between the compared groups in the area of satisfaction with the current life ($M_h = 3.65$; $SD_h = 0.81$; $M_d = 3.25$; $SD_d = 0.79$; $t(118) = 2.71$, $p < 0.01$, $d = 0.50$), health satisfaction ($M_h = 3.43$; $SD_h = 0.91$; $M_d = 2.93$; $SD_d = 0.71$; $t(111{,}465) = 3.36$, $p < 0.001$, $d = 0.98$), satisfaction with the physical domain ($M_h = 3.85$; $SD_h = 0.53$; $M_d = 3.56$; $SD_d = 0.51$; $t(118) = 3.07$, $p < 0.01$, $d = 0.56$) and satisfaction with the environment ($M_h = 3.65$; $SD_h = 0.43$; $M_d = 3.45$; $SD_d = 0.43$; $t(118) = 2.55$, $p < 0.05$, $d = 0.46$). Only in the areas of satisfaction with the psychological sphere ($M_h = 3.40$; $SD_h = 0.41$; $M_d = 3.44$; $SD_d = 0.49$) and the social sphere ($M_h = 3.77$; $SD_h = 0.65$; $M_d = 3.67$; $SD_d = 0.60$) were no significant differences between groups recorded.

Women suffering from type 2 diabetes are most satisfied with the social sphere of their lives, which is at a level similar to that of satisfaction with the physical sphere, but is significantly different from the satisfaction with the remaining areas. Satisfaction with the physical domain is considerably different from satisfaction with the psychological aspect of life, current life and health. The level of satisfaction with the psychological sphere is similar to the one with the current life. Similarly, satisfaction with the environment is at a similar level as satisfaction with the physical and psychological sphere as well as the present situation. The level of health satisfaction is the lowest and it is also significantly lower than satisfaction with the remaining spheres of life.

In the group of healthy women the greatest satisfaction is attributed to the physical sphere and is at a similar level to social satisfaction, but on the other hand, considerably higher than the feeling of satisfaction with the other spheres. However, the satisfaction with the social domain does not differ from the satisfaction with the environment or current life, but at the same time it is different from satisfaction with health and the psychological sphere. Satisfaction with the environment is similar to the level of satisfaction with current life but considerably higher than the level of satisfaction with health and the psychological sphere. The satisfaction with current life, in turn, is similar to health satisfaction but significantly greater than the satisfaction with the psychological sphere. Healthy women are least satisfied with their health and their psychological domain. The results are presented in Table 2.

In order to verify the differences in terms of using proactive coping strategies an analysis was conducted of variance in a mixed scheme: 2 (group: women with diabetes *versus* healthy women) x 7 (strategy: proactive *versus* reflective *versus* strategic planning *versus* preventive *versus* emotional support seeking *versus* instrumental support seeking *versus* avoidance). A factor measured within the groups was the used coping strategy, whereas a factor between the individuals was membership of one of the examined groups. A dependent variable was the preference (frequency) of using a strategy. The data is shown in

[1] M_h – average result in the group of healthy women, SD_h – standard deviation in the group of healthy women; M_d – average result in the group of diabetic women, SD_d – standard deviation in the group of diabetic women

Table 2. Comparison of satisfaction (measured by WHOQoL) within the studied groups

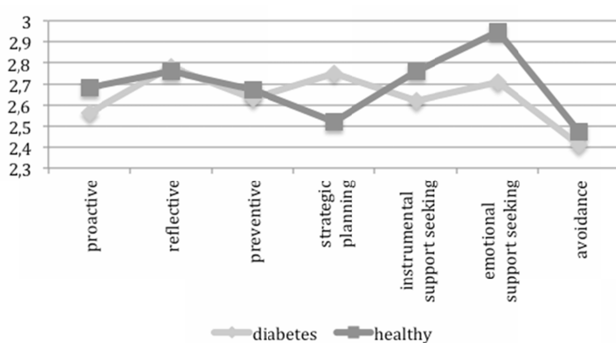
Satisfaction	Diabeting women		Non-diabeting women	
	t(*df* = 59)	*p*	*t*(*df* = 59)	*p*
1–2	**2.94**	**0.005**	1.82	0.074
1–3	**-2.51**	**0.015**	**-2.51**	**0.013**
1–4	-1.87	0.065	**2.53**	**0.014**
1–5	**-4.02**	**0.001**	-1.21	0.288
1–6	-1.84	0.071	-0.07	0.945
2–3	**-7.68**	**0.001**	**-3.70**	**0.001**
2–4	**-7.37**	**0.001**	0.31	0.758
2–5	**-7.90**	**0.001**	**-2.74**	**0.008**
2–6	**-5.97**	**0.001**	**-2.07**	**0.042**
3–4	**2.26**	**0.027**	**5.66**	**0.001**
3–5	-1.55	0.125	0.69	0.499
3–6	1.73	0.089	**2.61**	**0.011**
4–5	**-3.45**	**0.001**	**-3.80**	**0.001**
4–6	-0.98	0.922	**-4.87**	**0.001**
5–6	**3.48**	**0.001**	1.07	0.287

1 – satisfaction with current life; 2 – satisfaction with health; 3 – satisfaction with physical domain; 4 – satisfaction with psychological domain; 5 – satisfaction with social domain; 6 – satisfaction with environmental domain

Figure 2. The analysis demonstrated the main effect of the strategy $F(6, 708) = 11.11$; $p < 0.001$, $\eta^2 = 0.089$ and the interaction effect of both variables $F(6, 708) = 3.93$; $p < 0.001$, $\eta^2 = 0.032$.

In order to investigate the interaction effect a simple effects analysis was conducted. The analysis pointed out a statistically significant difference with respect to the frequency of using strategic planning ($M_h = 2.52$; $SD_h = 0.60$; $M_d = 2.75$; $SD_d = 0.42$; $t(108,081) = 2.41$,

Figure 2. Proactive strategies of coping with difficult situations (measured by PCI) in the studied groups



$p < 0.05$, $d = 0.45$) as well as with regard to seeking emotional support ($M_d = 2.95$; $SD_h = 0.64$; $M_d = 2.71$; $SD_d = 0.56$; $t(118) = 2.15$, $p < 0.05$, $d = 0.44$). No significant differences between groups were noticed with regard to the strictly proactive strategy ($M_h = 2.56$; $SD_h = 0.36$; $M_d = 2.68$; $SD_d = 0.35$), the reflective strategy ($M_h = 2.76$; $SD_h = 0.41$; $M_d = 2.78$; $SD_d = 0.37$), preventive coping ($M_h = 2.67$; $SD_h = 0.43$; $M_d = 2.63$; $SD_d = 0.35$), seeking instrumental support ($M_z = 2.76$; $SD = 0.58$; $M_c = 2.62$; $SD = 0{,}54$) or avoidance ($M_h = 2.47$; $SD_h = 0.43$; $M_d = 2.41$; $SD_d = 0.53$).

The coping strategy used most often by diabetic women is the strategy of reflective coping. In terms of frequency, this strategy does not differ from strategic planning or seeking emotional support, while at the same time its frequency is significantly different from that of the other strategies. Strategic planning, however, is indeed used more often than the strategy of preventive coping, seeking instrumental support, the proactive strategy or avoidance. Seeking emotional support occurs more frequently than seeking instrumental support, using the proactive strategy or avoidance of difficult situations. Nevertheless, in terms of frequency, it is close to strategic planning and the preventive strategy. The latter strategy is used with the frequency similar to that of employing the strategy of seeking instrumental support and the proactive one. At the same time it is adopted more often in comparison to avoidance, but on the other hand, significantly less frequently in comparison to strategic planning and the reflective strategy. Seeking instrumental support is employed considerably more frequently than avoidance, which in turn is the least common strategy. Its frequency is similar only to the one of the proactive strategy, whereas it differs substantially from the frequency of the use of all the other strategies.

In the group of middle adulthood women not suffering from diabetes the most frequently employed strategy is seeking emotional support. Further strategies adopted with similar frequency include the reflective strategy, instrumental support and the proactive strategy. The last aforementioned strategy is not more frequent than the preventive strategy, which in turn is employed significantly more often than strategic planning and avoidance, but significantly more rarely than seeking emotional and instrumental support or the reflective strategy. Strategic planning is adopted considerably less frequently than all the other strategies except avoidance, which is the least common of all the strategies. The results of the analysis are presented in Table 3.

The next stage of the research involved the assessment of the importance of the proactive strategies for the quality of life satisfaction. A regression analysis was performed with the use of the method of introduction for the general level of satisfaction with prior as well as current life and its particular areas. The dependence models were created separately for each group. It turned out that for the general sense of prior life satisfaction for women with type 2 diabetes the two proactive strategies, namely the preventive and the reflective coping, are of importance. They explain

Table 3. A comparison of the frequency of strategy implementation within the examined groups

Strategy	Diabetic women		Non-diabetic women	
	t(*df* = 59)	*p*	*t*(*df* = 59)	*p*
1–2	**-5.84**	**0.001**	-1.65	0.104
1–3	-1.58	0.119	0.12	0.907
1–4	**-3.31**	**0.002**	**2.36**	**0.021**
1–5	-0.81	0.420	-1.05	0.295
1–6	**-1.96**	**0.050**	**-3.49**	**0.001**
1–7	1.76	0.084	**2.53**	**0.014**
2–3	**3.81**	**0.001**	**2.40**	**0.019**
2–4	0.63	0.535	**4.01**	**0.001**
2–5	**2.15**	**0.036**	0.82	0.935
2–6	0.92	0.353	**-2.42**	**0.018**
2–7	**4.76**	**0.001**	**3.86**	**0.001**
3–4	**-2.79**	**0.007**	**3.02**	**0.009**
3–5	0.14	0.891	-1.03	0.308
3–6	-0.93	0.356	**-3.24**	**0.002**
3–7	**2.95**	**0.004**	**2.33**	**0.023**
4–5	**-2.75**	**0.008**	**-2.49**	**0.016**
4–6	0.39	0.701	**-4.75**	**0.001**
4–7	**3.89**	**0.001**	**0.53**	**0.001**
5–6	**-2.17**	**0.034**	**-4.95**	**0.001**
5–7	**2.51**	**0.015**	**2.78**	**0.007**
6–7	**3.54**	**0.001**	**4.77**	**0.001**

1 – proactive; 2 – reflective; 3 – preventive; 4 – strategic planning; 5 – instrumentál support seeking; 6 – emotional support seeking; 7 – avoidnce

about 19% of variance. What is significant in the case of the satisfaction with the health and the psychological domain is the reflective coping. Nevertheless, in the first case it explains only about 8% of variance and in the second case only 9%. For the feeling of satisfaction with the physical domain the reflective and preventive coping strategies are of importance, as it is in the case of general satisfaction with prior life. The model explains about 27% of variance. What is significant in the case of the social domain is the more frequent use of the strategy of seeking emotional support and the less frequent use of avoidance. Both these strategies explain about 33% of variance. For the domain regarding the environment, seeking emotional support is the most significant strategy that explains about 25% of results variance. On the other hand, the proactive strategies are insignificant for the feeling of satisfaction with quality of life in the context of the evaluation of the current life.

Table 4. The influence of proactive strategies of coping with stress on the level of satisfaction with prior and current life and its particular aspects in the group of women with type 2 diabetes

Model	*B*	*SE*	*Beta*	*t*	*p*
Satisfaction with prior life					
(Constant)	5.97	1.34		4.43	0.001
Preventive coping	-2.12	0.60	-0.55	-3.56	0.001
Reflective coping	1.2	0.57	0.33	2.12	0.038
$R = 0.425$; $R^2 = 0.187$; $F(1,59) = 6.27$; $p = 0.003$					
Satisfaction with health					
(Constant)	1.45	067		2.18	0.033
Reflective coping	0.53	0.24	0.28	2.23	0.030
$R = 0.281$; $R^2 = 0.079$; $F(1,59) = 4.96$; $p = 0.030$					
Satisfaction with physical domian					
(Constant)	2.29	0.48		4.73	0.001
Reflective coping	0.92	0.21	0.67	4.51	0.001
Preventive coping	0.49	0.22	-0.33	-2.26	0.028
$R = 0.519$; $R^2 = 0.268$; $F(1,59) = 10.49$; $p = 0.001$					
Satisfaction with psychological domian					
(Constant)	0.35	0.46		5.09	0.001
Reflective coping	0.39	0.16	0.30	2.39	0.020
$R = 0.300$; $R^2 = 0.090$; $F(1,59) = 5.72$; $p = 0.021$					
Satisfaction with social domian					
(Constant)	2.64	0.39		6.74	0.001
Emotional suport seeking	0.64	0.12	0.59	5.21	0.001
Avoidance	-0.29	0.13	-0.26	-2.26	0.028
$R = 0.573$; $R^2 = 0.328$; $F(1,59) = 21.23$; $p = 0.001$					
Satisfaction with environmental domian					
(Constant)	2.39	2.47		9.69	0.001
Emotional suport seeking	0.39	0.09	0.50	4.39	0.001
$R = 0.500$; $R^2 = 0.250$; $F(1,59) = 19.34$; $p = 0.001$					

Table 5. The influence of proactive strategies of coping with stress on the level of satisfaction with prior and current life and its particular aspects for the group of healthy women

Model	*B*	*SE*	*Beta*	*t*	*p*
Satisfaction with current life					
(Constant)	432	0.77		5.61	0.001
Emotional support seeking	1.86	0.37	1.11	5.04	0.001
Reflective coping	-0.85	0.29	-0.33	-2.85	0.001
Imstrumental support coping	-0.96	0.41	-0.51	-2.32	0.024
$R = 0.650$; $R^2 = 0.425$; $F(1,59) = 13.65$; $p = 0.001$					
Satisfaction with health					
(Constant)	1.45	0.78		1.84	0.07
Proactive coping	0.82	0.29	0.35	2.83	0.006
$R = 0.349$; $R^2 = 0.122$; $F(1,59) = 8.03$; $p = 0.006$					
Satisfaction with phisical domain					
(Constant)	5.47	0.42		13.03	0.001
Reflective coping	-5.85	0.15	-0.45	-3.89	0.001
$R = 0.455$; $R^2 = 0.210$; $F(1,59) = 15.16$; $p = 0.001$					
Satisfaction with psychological domain					
Model	*B*	*SE*	*Beta*	*t*	*P*
(Constant)	3.12	0.44		7.04	0.001
Avoidance	-0.35	0.09	-0.41	-3.77	0.001
Proactive coping	0.43	0.13	0.36	3.25	0.002
$R = 0.571$; $R^2 = 0.326$; $F(1,59) = 13.81$; $p = 0.001$					
Satisfaction with social domain					
(Constant)	4.32	0.67		6.48	0.001
Emotional support coping	0.89	0.15	0.67	6.14	0.001
Avoidance	-0.57	0.17	-0.33	-3.32	0.002
Reflective coping	-0.63	0.23	-0.31	-2.79	0.007
$R = 0.683$; $R^2 = 0.466$; $F(1,59) = 16.28$; $p = 0.001$					
Satisfaction with environmenta, domain					
(Constant)	3.56	0.43		8.22	0.001
Proactive coping	0.81	0.14	0.64	5.63	0.001
Reflective coping	-0.37	0.13	-0.35	2.77	0.007
Avoidance	-0.27	0.09	-0.27	-2.58	0.013
Imstrumental support coping	-0.17	0.08	-0.22	-2.02	0.049
$R = 0.694$; $R^2 = 0.482$; $F(1,59) = 12.77$; $p = 0.001$					

The research concluded that three variables are important in the case of the healthy women's general satisfaction with their prior life, namely: seeking emotional support, reflective coping and seeking instrumental support. The model explains about 42.5% of variance. For the satisfaction with current life, however, the proactive coping turns out to be essential. This variable explains 12% of variance. An important predictor for the satisfaction with the physical sphere, which explains only 21% of variance, is the reflective coping, whereas in the case of the psychological sphere the strategies of avoidance and proactive coping are crucial; they explain 32.6% of the results variance. For the feeling of satisfaction with quality of life in the social domain three coping strategies are important, namely: seeking emotional support, avoidance and reflective coping. All these strategies combined explain over 46% of variance. In the case of the level of satisfaction with quality of life in the domain of the environment, the research discovered four significant variables that explain 48% of variance. They include the proactive strategy, reflective coping and avoidance as well as seeking instrumental support. In addition, it was concluded that in the case of the healthy women the use of proactive strategies does not affect their level of health satisfaction.

Discussion of the results

Diabetes, as all chronic diseases, is a source of continuous stress for every person. It carries a constant risk of losing strength or deterioration of the condition. Moreover, it might make everyday life more difficult due to the medical complications or the necessity to permanently receive medication. Such a situation may become a cause of the lowering of the feeling of satisfaction with life and its particular aspects. The results of the research presented here indicate that, in comparison to the healthy women, the middle adulthood women suffering from type 2 diabetes are characterized by the generally lower sense of quality of their prior and current life as well as by the lower level of satisfaction with their quality of life with regard to health and the physical domain connected with everyday activities, energy levels, mobility, possibilities of leisure and sleep and the ability to work. In addition, the diabetic women are less satisfied with their environment which includes financial resources, physical and psychological security, the accessibility and quality of healthcare and physical environment (e.g. noise). The differences found in the presented research can undoubtedly result from multiple limitations and complications caused by the disease which frequently necessitate the change of lifestyle and are a source of negative emotions especially regarding health and broadly defined independence. The study indicates that the factors lowering the quality of life of the people suffering from chronic diseases, such as diabetes, include: mobility limitations, pain and comorbidities (Koligat et al., 2012). In the group of middle adulthood women with type 2 diabetes one can observe the harmful influence of the lowered production of the hormones of the ovaries on the glucose metabolism and the development of vascular

diseases – retinopathy or nephropathy. What is more, due to dyslipidemia, the women in the group are at a higher risk of ischaemic heart disease (Grzechocińska, 2004). It is worth adding that out of all the aspects of life, health is the one with which diabetic women are definitely least satisfied, whereas the area of social relations (personal and family relations, social support) is the most satisfactory for them. The satisfaction with the last aforementioned area, just as the contentment with the appearance and spiritual and cognitive spheres, is at a level similar to the one recorded for the group of healthy women. The research results quoted in the literature on the matter discussed here point out that for diabetic patients participation in a social life and strong family relations have a positive influence on the sense of satisfaction with the quality of life (Koligat et al., 2012). On the other hand, a chronic disease lasting many years may affect the frequency and quality of social contacts (Pietrzykowska, Zozulińska, Wierusz--Wysocka, 2007) or limit the possibilities of taking on social roles (Koligat et al., 2012) and lower the satisfaction with the psychological sphere (Bosić-Živanović, Medić--Stojanoska, Kovačev-Zavišić, 2012). Therefore, it is an area requiring further exploration. The author's previous research regarding the quality of life conducted in the group of patients with type 2 diabetes in comparison to healthy individuals (regardless of sex and developmental period) confirmed the differences regarding overall quality of life in relation to present life, health and the physical domain (Kalka, 2014; Kalka, Pawłowska, 2015). In the case of middle-aged women, a lower level of satisfaction with the environmental domain may be associated with the developmental period itself, the decline in resources and the midlife assessment. In relation to the quality of life and satisfaction with individual areas, an important question arises about the significance of the emotional factor. Studies found in the literature show that in the group of patients with type 2 diabetes a substancial proportion of patients suffer from depression (e.g. Anderson, Freedland, Clouse, Lustman, 2001; Nicolucci et al., 2013; Makara-Studzińska, Partyka, Ziemecki, Ziemecka, Andrzejewska, 2013), and the level of symptoms in comparison to healthy individuals is higher in the case of individuals with diabetes (e.g. Mućko, Kokoszka & Skłodowska, 2005; Nicolucci et al., 2013; Kalka, 2014). The current analyses do not include this variable, but it will be included in further analyses of this group.

As has already been mentioned, due to the significant increase of stress at the time of middle adulthood (Oleś, 2011), especially in the case of the chronically ill, the ability of coping with difficult situations is of crucial importance. The proactive coping strategies are key elements of preparation to face difficult changes and events that may endanger personal goals or threaten general well-being. In the case of chronic diseases, including type 2 diabetes, they are of great significance. These strategies (Aspinwall & Taylor, 1997) make it possible to avoid potential stressors in some situations or minimize their negative influence, which in turn lowers the feeling of distress caused by them. The proactive strategies allow a person to keep chronic stress under control. A person that anticipates the occurrence of difficult situations, such as for example complications following a disease, is prepared for various possibilities and possesses a wider range of options of coping with them than a person that fights stress in a reactive way. Being proactive in the process of dealing with difficulties involves predicting future risks, requirements and possibilities and perceiving them as challenges, not dangers (Greenglass, 2002). Due to that fact, itentails the development and accumulation of resources and at the same time facilitates achievement of goals and personal development. As regards the proactive coping strategies directed at anticipated stressful situations, the middle adulthood women suffering from type 2 diabetes, more often than the healthy women, resort to strategic planning that involves devising a course of action leading towards a particular objective. It is a process in which large tasks are divided into smaller and therefore more feasible elements. The more common use of this strategy by the middle adulthood women with type 2 diabetes can be related to the fact of their declining organismic resources in comparison to the healthy women. The very period of middle adulthood and the developmental tasks it poses, the variety of roles it involves and the necessity to divide the energy and time between two generations (the parents and the children) it includes is already a challenge (Borysenko, 2003). Nevertheless, it is complicated even more by the need to obey numerous rules connected with a person's health condition. The "small steps" method used to solve difficult situations may in this case become a type of defence mechanism protecting the already depleted resources. The strategy of seeking emotional support based on a person's social network, however, is employed considerably less frequently by the examined diabetic women than by those from the healthy group. It might be that, in the case of the chronically ill middle adulthood women, the rare use of the aforementioned strategy in comparison to healthy people results from their unwillingness to reveal to the others their health-related problems, from the fear of rejection or being treated with compassion as well as from the fear of being perceived as worse or even from their unwillingness to be treated leniently when doing chores. There is also the likelihood that a rarer use of this strategy by women with diabetes in comparison to healthy women is due to their previous experience connected with criticism of their behaviour when they open up in the presence of other people. Regardless of the fact of being diabetic or not, all the middle adulthood women adopt with similar frequency the proactive strategy of setting new life goals, the reflective coping strategy consisting in the creation and consideration of alternative courses of action and the evaluation of their effectiveness, the preventive coping strategy connected with predicting threats and staving them off, the strategy of seeking instrumental support based on the search for information, tools or ways of coping with a problem, and the strategy of avoidance i.e. of distancing oneself from the stressful situation. The similar frequency of the use of some of the proactive strategies stems

from the fact that these strategies are connected with the feeling of control and creation of competence resources both in a situation of normative stress and a health-related one (Sęk & Pasikowski, 2003; Ostrowska, 2013). It is also worth pointing out that the strategies used most frequently by the diabetic women include the reflective coping, strategic planning and seeking emotional support. Chronic diseases make individuals adapt to life with many restrictions. Creating and considering alternative action plans in the case of ill women may result from the experience connected with the numerous obstacles generated by a disease, the necessity of coping with sudden and unexpected (often life-threatening) situations, which in the case of ill individuals require immediate decisions without the possibility of postponement on matters of importance. Preparing a schedule of minor goal-oriented activities helps a person to function in the time when their ability to undertake actions is not always as effective as prior to the disease. Other people, and the possibility to open up emotionally, are of particular importance in the daily life of a sick person. This creates a sense of security and support. Although a strategy based on the use of social networks in coping is much less common in patients than in healthy individuals, it is still one of the three most common ones. In the group of healthy women, the most common strategy is relying on significant persons, which implies the possibility of revealing one's emotions to others and receiving from them advice and support, as well as creating and considering alternative action plans (seeking emotional and instrumental support and using the strategy of reflective coping). Avoidance is the least common strategy for both groups. A passive and distanced approach to stress is not an approach that secures effective functioning, hence the rare use of this strategy by women in their middle adulthood is an opportunity for development. The research cited in the literature on the subject matter of this paper conducted on a group of diabetic persons concluded for instance that the proactive coping strategies facilitate preparation for living with the disease including more effective self-control both in the case of the newly diagnosed patients (Thoolen et al., 2009) as well as in the case of those already being treated-especially the middle-aged patients and the elderly (Naik et al., 2012). Moreover, the higher level of self-control (Collins, Bradley, Sullivan, Perry, 2009) of the people using the strategy of proactive coping is related to the feeling of being personally responsible for functioning with the disease, the sense of one's own effectiveness and the fact of regarding health as one of the greatest values. The proactive attitude entails being active in matters regarding the illness (including the control of glycaemia), and increases the frequency of contacts with the health service in order to clarify doubts and set goals for treatment.

As mentioned earlier, the literature quotes research carried out on various groups which points out that the use of the proactive coping strategies affects the feeling of satisfaction with quality of life (Greenglass, 2002; Sęk & Pasikowski, 2003). It was discovered that in the case of the middle adulthood women suffering from type 2 diabetes the fact of not perceiving future challenges as dangers accompanied by deliberation about various hypothetical alternative solutions and the estimation of their effectiveness increases satisfaction with prior life as well as with everyday activities, energy levels, mobility, opportunities for rest and sleep and the ability to work. The people who think about different courses of action and compare their effectiveness are more content with their health and appearance as well as with the spiritual and cognitive sphere of their lives. Those middle adulthood women suffering from type 2 diabetes who show their emotions to others and do not delay taking action in the face of approaching a difficult situation are more satisfied with their personal relationships and social support. Expressing one's emotions in front of others when anticipating a situation of distress also increases satisfaction with the area of life connected with the influence of the environment and regarding material resources, freedom, physical and psychological security, the household, the opportunity of gaining new information and skills, the possibility of participation in leisure activities as well as various aspects of the physical environment (pollution, noise, traffic, climate).

In the case of the healthy women it turned out that the more often they show their emotions to others when anticipating difficulties and the less they are focused on simulation and planning of their behaviours and devising hypothetical plans of action and the less they seek advice, information and feedback, the higher their general satisfaction with their prior life. The satisfaction with the quality of current life, in turn, goes up as a result of setting personal goals as well as due to the cognitive and behavioural actions undertaken to accomplish these goals. On the other hand, concentration on simulation and planning of their behaviours and hypothetical plans of action increases contentment with everyday activities, energy level, mobility, opportunities for leisure and sleep as well as the ability to work. The healthy middle adulthood women who do not delay taking action in the face of a difficult situation and at the same time set personal goals and strive to achieve them are more satisfied with their appearance and the spiritual and cognitive sphere of their lives. The more often the women from this group show their emotions to others and the less they delay taking action when they are about to face a difficult situation and the less they are focused on simulation and planning of their behaviours and hypothetical courses of action, the more content they are with their relationships and social support. The material resources, physical and psychological security and the access to and the quality of healthcare or the physical environment bring more satisfaction to those healthy women who set personal goals and strive to achieve them while at the same time concentrating on simulation and planning of their behaviours and hypothetical courses of action, and who do not delay taking action in the face of approaching a difficult situation, nor seek advice, information or feedback that often.

The concept of proactive coping with difficulties connected with the salutogenic approach to stress emphasizes the positive aspect of coping (Schwarzer

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POLSKA AKADEMIA NAUK

& Knoll, 2003). The proactive strategies aiming at anticipated stress are considered a health resource (Poprawa, 2009). Not only do they allow a person to prepare for future difficult situations, but they also involve personal development and the increase of life satisfaction. These dependencies are particularly important especially in the case of the chronically ill middle adulthood women who are challenged not only by the tasks generated by their developmental period but also by the disease-related stress. It is significant that the proactive coping strategies, which may eliminate a part of this stress, can be learned. Therefore, the creation of educational programmes designed to teach and practice such strategies is useful and necessary.

In the course of further research it would be worth contrasting the results with a group of women from different age groups as well as controlling the variables, not included in the research presented here, which are largely related to the process of adjustment to the role of a sick person and therefore crucial to the satisfaction with the quality of life (Dąbrowska et al., 2012). Such variables include the age of being diagnosed and the period of suffering from a disease, the occurrence of various types of complications or the kind of therapy (Redekop et al., 2002; Pufal et al., 2004). As was previously mentioned, the analyses will include a variable of the level of intensity of depression symptoms. Undoubtedly it would also be worth expanding the area of exploration over a group of men in the period of middle adulthood.

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