UDC 616-018:616:379-012.54:564:116.2

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Quality of life of diabetic patients of the land «Karaganda» depending of social and demographic factors

Authors studied indicators of quality of life of patients with 2 type of diabetes depending on a risk of diabetes, socialand demographic factors among population of the Karaganda region. The research carried out according Sscientific program «Environmental Risks and Health of the Population». Screening included using of elaborated by authors of questionnaire contained official consent of respondent (patient) as information abouta sex, age, data on social factors (level of the income, family status (married or not), education, employment, nature of work), availability or absence of chronic diseases were specified. For determination of risk groups of diabetes the questionnaire of FINDRISC (The Finnish Diabetes Risk Score) was used. For a quality of life estimation the short version of questionnaire of WHO (WHOQOL-BREF) which consists of 26 questions. The analysis of results of a scale of FINDRISC showed that at 24.6 % of respondents in the next 10 years moderate, high and very high risk of SD took place (12 points and more).

Key words: diabetic patient, Karaganda region, quality of life, social and demographic factors.

Actuality

Now epidemic of chronic noninfectious diseases among which one of significant positions are belong to the diabetes mellitus (DM) is around the world observed. According prognosis of International Diabetes Federation prevalence of diabetes will increase to of 8.8 % by 2035 worldwide [1]. According to WHO data [2], prevalence of DM in Kazakhstan from 1980 to 2014 is increased from 72,000 registered patients (0.48 % of population) to 208,000 (1.4 %). Due to the existence by the long-lived preclinical stage, number of not diagnosed patients with DM cases of NIDDM fluctuate from 30 % to 90 % [3]. One of f way for to reduce the risk of development of DM is identification of the risk groups based on application the of questionnaires. The questionnaire developed by the Finnish diabetic association for assessment of ten-year risk of development of NIDDM was widely adopted.

DM is associated with high risk of development of cardiovascular complications, nephropathy, decreasing of working capacity and of quality of life (QL) [4]. Quality of life is one of important methods for assessment of effectiveness of treatment and p of health in the future prognosis of state disease [5–8].

The research objective: to study quality of life depending on of risk of a diabetes mellitus and its social and demographic determinants among the population of the Karaganda region.

Material and methods

The single-step transversal research in the form of screening among the population of the Karaganda region is carried out according scientific program named as «Environmental Risks and State of Health of the Population». Screening included questioning for which the questionnaire was elaborate. The questionnaire contain information for the participant as a sex, age, data on social factors (level of the income, marital status, education level, employment, the nature of work), existence or absence of chronic diseases were specified.

For definition of risk groups of DM the questionnaire of FINDRISC (The Finnish Diabetes Risk Score) was used. FINDRISC questionnaire with success is used in many countries and is recommended by the working group of the European society of cardiologists (European Society of Cardiology — ESC) and the European association for studying of a diabetes mellitus (EASD). The questionnaire of FINDRISC contains 8 questions of an age, the body weight index (BWI), the waist circle (WC), the physical activity (PA), using of fruit and vegetables in diet, anti-hypertensive therapy. Each answer is estimated on particular number of points which sum corresponds to risk of SD 2 types (maximum 26 points). For to estimate test of QL the short version of a questionnaire of WHO (WHOQOL-BREF) was used which consists of 26 questions. According to the recommended method number of points on scales of physical health, psychological perception, the social relations and a surrounding medium were counted; separately opinions of the respondent about quality of life and the state of health were estimated. 3684 patients at the age 18–65, a permanent resi-

dents of the Land KARAGANDA were examined. Patients gave the written consent for participation in examination.

Pregnant women, persons with a mental, serious neurologic illness were criteria of an exception. Material of 519 people (80.7 % men) were excluded as not completed. Among respondents women 2437 (77 %) were prevailed. All patients were invited for examination in Policlinic

Results and discussion

The analysis of results of the scale of FINDRISC showed that at 24.6 % of respondents have in the next 10 years a moderate, high and very high risk of DM (12 points and more) comparatively with 37.5 % at Moscow region (Russia) [9]. It was established that increasing of number of the points according a questionnaire the percent of patients with disturbances of carbohydrate metabolism were increased. In group the sum less than 5 points a disturbances of carbohydrate metabolism was minimal (at 23 % of patients) and prevalence of NIDDM — only 0.8 %. Among the persons with more than 20 points disturbances of carbohydrate metabolism was increased until 76.9 %, and prevalence of NIDD –until 23.1 %. Sensitivity of screening of 12 and more points made 73.5 %, and specificity — 66.7 %. By other authors it is showed that 31.7 % of adult population of Novosibirsk have on average a high and very high risk of development of NIDDM in the next 10 years [10].

In Greece 15 and more points were confirmed at 45 % of population and not diagnosed disturbances of carbohydrate metabolism were revealed in 33.1 % of population [11]. Sensitivity of FINDRISC scale — 81.9 % and specificity of 59.7 %. It should be noted that in this research [11] female persons (56.7 %) also prevailed with middle age 45.4±12.7 years in our work. In our research the highest risk (12 points and more points) was revealed among persons of 55 years and more (table 1); existence of genetic factor is noted at 53.1 % in group with moderate and high risk of DM. It is expected as the age and the burdened heredity is one of key not modified risk factor developing of 2 type DM. There are a tendency to increase in abundance of 2 type of DM at persons more young than age as 30 years. M.A. Sayed, H.Mantab showed that in age group of 20–29 years prevalence of DM 2 of type was 2.5 % among all population, in age group of 40–49 years this indicator increased to 3.7 % [12]. The risk of DM in our research among persons of 18–25 years is 4.2 %.

Within the Global strategy of prophylaxis of chronic noninfectious diseases and activity against fundamental risk factors of DM, cardiovascular diseases the percent of abundance of the modified factors in group with low risk of DM pays an attention. We showed that absence of daily 30th minute physical activity is confirmed at 61.6 % of respondents, absence of daily using of vegetables — at 74.9 %, an abdominal obesity — at 62.5 %, body weight and an obesity — at 74.6 % and 49.3 % patients of the same group. Considering that in group with absence and low risk of DM(0–11 points) persons of young and middle age prevailed, the optimization of a diet and of physical activity is extremely urgent and will promote strengthening of health of individuals and all population in general. Interrelations between risk of 2 type DM and social and demographic indexes are presented on Table 1.

T a b l e 1

Interrelations between risk of 2 type DM and social and demographic indexes are presented in (*n*=3165)

Variable	N (%) Risk of DM (12 and more)	Risk of DM (0–11)	X^2	d.f.	P
1	2	3	4	5	6
Age, years			486.1		0.001
18–34	32 (4.2)	728 (95.8)			
35–44	77 (11.5)	593 (88.5			
45–54	260 (30.1)	605 (69.9)			
55+	411 (47.2)	459 (52.8)			
Gender			12.7	1	<0.001
Male	143 (19.6)	585 (80.4)			
Female	637 (26.1)	1800 (73.9)			
Ethnic background			25.9	2	<0.001
Kazakh	415 (21.5)	1513 (78.5)			
Russian	239 (29.8)	564 (78.2)			
Other	126 (29.0)	308 (71.0)			

1	2	3	4	5	6
Education			12.1	2	0.002
Secondary or less	299 (25.3)	882(74.7)			
Vocational	296 (27.3)	790 (72.7)			
Higher	185(20.6)	713 (79.4)			
Occupation			64.2	1	0.001
At work/study	440 (20.4)	1713 (79.6)			
Out of work	340 (33.2)	672 (66.4)			
Month salary:			3.63	2	0.162
Low	131 (28.1)	336 (71.9)			
Middle	249 (23.6)	807 (76.4)			
Middle and over	400 (24.4)	1242 (75.6)			
Marital status			1.05	1	0.31
Married	532 (21.1)	1673(75.9)			
Unmarried	248 (25.8)	712 (74.2)			

Percent of persons with moderate, high and very high risk of DM (12 and more points) was higher among women in comparison with men. Results studies of prevalence of 2 type of DM in two Moscow's administrative districts showed a dominance of women in comparison with men by 2.3 times is revealed [13]. The tendency to a moderate dominance of women among patients with 2 type of DM is observed also in other countries [14]. However so the significant differences most likely are determined maybe by more frequent requests of women for a medical care and also more high mortality and among men.

The most low frequency of risk of DM is confirmed among respondents of Kazakh nationality. In the research of A. Supiyevet al. [15] a dominance of abundance of 2 type of DM among of Russian persons, Belorussian, Ukrainen in comparison with Kazakhs is also revealed.

There are existence of interrelation between risk of DM and level of education. Persons with higher education have low risk of DM that is determined by a larger knowledge, motivation to keeping of a healthy lifestyle and nutrition. These data are confirmed by more high attention to treatment and self-control. The income level at a tendency to low risk of DM in group with more high level of the income, has statistically no significant influence on risk of DM (p<0.162). Increase number of persons who do not work and do not study in group of high risk of DM is caused by a dominance among them of the elderly people who are on pension.

The comparative analysis of quality of life (Table 2) showed that indexes of all scales, including the common evaluation test of life and health, were lower in group with moderate and high risk of DM (1 group).

T a b l e 2

Indicators of quality of life (WHOQOL-BREF) in patients with different risk of diabetes

Indicators of QL of WHO	1 group (12 poits and more) (n=780) M+SD	2 group (0–11 points) (n=2385) M+SD	t	P
Assessment of QL, %	66.5±15.9*	68.8±16.3	−3.49	0.001
Assessment of state of health, %	48.9±24.7	56.5±23.5	−7.48	0.001
Physical health, %	55.8±13.2	58.0±1.5	−3.80	0.001
Psychological health, %	58.7±12.6	61.5±13.3	−5.17	0.001
Social relations, %	64.8±16.5	69.3±16.5	−6.54	0.001
Environment, %	47.6±11.9	49.6±12.3	−3.87	0.001

Decrease in indexes carried small, but statistically significant character; the greatest distinctions depending on degree of risk of DM were according to health (for 7.6 %) and to a scale «the social relations» — are 4.5 % lower in 1 group on comparison with the second.

The quality of life (QL) at patients with DM is depend not only of DM but s of the presence of factors as: satisfactions by treatment, complications, psychological adaptation of the patient as social and demographic factors (Table 3).

Interrelation between quality of life (QL) and social and demographic factors

Variable	N (%) QL as «well» and «more better»	QL (%)as «not badly» and «not well»	X^2	d.f.	P
Age, years			26.2	3	0.001
18–34	594 (76.8)	179 (23.2)			
35–44	491 (72.5)	186 (27.5)			
45–54	587 (67.1)	288b (32.9)			
55+	590 (67.0)	290 (33.0)			
Gender			3.916	1	0.048
Male	546 (73.5)	197 (26.5)			
Female	1717 (69.7)	746 (30.3)			
Ethnic background			122.9	2	0.001
Kazakh	1512 (77.7)	434 (22.3)			
Russian	474 (58.2)	341 (41.8)			
Other	277 (62.2)	168 (37.8)			
Education			21.9	2	0.001
Secondary or less	815 (67.9)a	386 (32.1)			
Vocational	754 (68.6)	345 (31.4)			
Higher	693(76.6)a	212 (23.4)			
Occupation			10.2	1	0.001
At work	1576 (72.4)	602 (27.6)			
Out of work	687 (66.8)	341 (33.2)			
The monetary income of family:			140.9	2	0.001
Low	271 (57.4)a	201 (42.6)			
Lower than average	670 (62.3)a	405 (37.7)			
Average and above average	1322 (79.7)a	337 (20.3)			
Marital status			41.1	1	0.001
Married	1653 (74.0)	581 (26.0)			
Unmarried	610 (62.8)	362 (37.2)			
BMI, kg/м^2			1.65	2	0.437
Till 24.9	859 (71.8)	338 (28.2)			
25–29.9	738 (70.5)	309 (29.5)			
30 and more	666 (69.2)	296 (30.8)			

Interaction between social and demographic factors of life quality are a differ depending on the contingent of the surveyed, social and economic level of society, psychological features of the person. QL is decreased after 45 years, is worse at women, at respondents among persons not having a good education which is not working or with low level of the income and lonely (Table 3). The received results of general estimation of QL depending on age correspond to regularities of the general population [16] (Table 4). More high QL at respondents with the higher education can be explained by more good social adaptation, smaller frequency of risk factors of DM as of developing of a chronic noninfectious diseases.

Quality of life (QL) as «lower than «well» depending of social and demographic factors

Variable	cOR	95 % CI	p	aOR	a	P
1	2	3	4	5	6	7
Age, years			0.001			0.001
18–34	0.613	0.49–0.76		0.828	0.63–1.08*	
35–44	0.771	0.61–0.96		1.150	0.89–1.18*	
45–54	0.996	0.81–1.22*		1.380	1.10–1.73*	
55+	1	Reference		1	Reference	
Gender			0.048			,042
Male	1	Reference		1	Reference	
Female	1.48	1.20–1.81		1.25	1.0–1.56	

1	2	3	4	5	6	7
Ethnic background			0.001			0.001
Kazakh	0.67	0.53–0.85		0.69	0.54–0.88	
Russian	1.03	0.79–1.33*		0.98	0.75–1.28*	
Other	1	Reference		1	Reference	
Education			0.002			0.169
Secondary or less	0.91	0.75–1.09*		0.95	0.77–1.16	
Vocational	1	Reference		1	Reference	
Higher	0.69	0.56–0.85		0.81	0.64–1.01	
Occupation			0.001			0.001
At work	0.51	0.43–0.60		0.58	0.48–0.69	
Out of work	1	Reference		1	Reference	
Marital status			0.33			0.68
Married	0.92	0.77–1.09		0.96	0.79–1.16	
Unmarried	1	Reference		1	Reference	
Self-reported material deprivation			0.22			0.03
Low	1.18	0.93–1.48		0.86	0.67–1.10	
Below the average	0.95	0.79–1.13		0.77	0.63–0.94	
Average or higher	1	Reference		1	Reference	

For studying of possible communication of aggravation of QL with social and demographic factors the logistic regression analysis was carried out which showed that here are a relations with social, demographic factors, with age, a female, employment, level of the income and an ethnic origin remains (mentality, life style, nutrition). A low parameters of QL were showed at the respondents have low level of education, the financial position and in unemployed [16, 17].

Thus, results of our research showed that 24.6 % of respondents have an essential risk of development of DM which is followed by deterioration in all indexes of quality of life. Abundance of risk factors among persons with low risk of DM testifies to relevance of continuation of realization of the long-term priority activity on prevention of incidence of DM. The level of quality of life of patients with risk of development of DM assume need realization of preventive actions, first of all, among unemployed persons in age group 45 years are more senior.

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Л.Г. Тургунова, А.А. Турмухамбетова, Д.Т. Амирханова, А.Р. Алина

Қарағанды облысы тұрғындарының сусамыр (диабет) тәуекел деңгейіне байланысты өмір сүру сапасын және оның әлеуметтік-демографиялық детерминанттарын бағалау

Авторлар Қарағанды облысы тұрғындарының диабетке шалдығу деңгейіне және оның детерминанттарына байланысты диабеттің 2-түрімен ауыратын науқастардың тіршілік ету сапа көрсеткіштерін зерттеді. Зерттеу «Экологиялық қауіптілік және тұрғындар денсаулығы» атты ғылыми-техникалық бағдарлама шеңберінде өткізілді. Скринингтік зерттеулер үшін арнайы сауалнама жасалды. Онда зерттелушіге керек ақпарат және респонденттің келісімі шешуші болды. Сонымен қатар жынысы, жасы, әлеуметтік факторлар (табыс деңгейі, отбасылық жағдайы, білім деңгейі, жұмыс түрі), асқынған, созылмалы аурулар бар, жоқтығы көрсетілді. Қауіп тобын анықтау үшін FINDRISC (The Finnish Diabetes Risk Score) сұрақнамасы қолданылды. Тіршілік сапасына баға беру мақсатымен 26 сұрақтан тұратын ДДС сұрақнамасының қысқаша түрі келтірілді. FINDRISC сұрақнамасының нәтижесі респонденттердің 24.6 %-ға жуығы келер 10 жылда қалыпты, жоғары және өте жоғары (12 балл және одан жоғары) қант диабеті қауіпі болатынын растайды.

Л.Г. Тургунова, А.А. Турмухамбетова, Д.Т. Амирханова, А.Р. Алина

Оценка качества жизни в зависимости от степени риска сахарного диабета и его социально-демографические детерминанты у жителей Карагандинской области

Авторами изучены показатели качества жизни больных сахарным диабетом 2 типа в зависимости от степени риска и социально-демографических факторов среди населения Карагандинской области. Исследование проводилось в рамках выполнения научно-технической программы «Экологические риски и здоровье населения». Скрининг включал анкетирование, для проведения которого была разработана анкета для участника скринингового исследования, которая содержала информацию для участника исследования, информированное согласие респондента. Были указаны пол, возраст, сведения о социальных факторах (уровень доходов, семейное положение, уровень образования, занятость, характер труда), наличие или отсутствие хронических заболеваний. Для определения групп риска диабета использовался опросник FINDRISC (The Finnish Diabetes Risk Score). С целью оценки качества жизни была взята краткая версия опросника ВОЗ (WHOQOL-BREF), который состоит из 26 вопросов. Анализ результатов шкалы FINDRISC показал, что у 24.6 % респондентов в ближайшие 10 лет возможен умеренный, высокий и очень высокий риск СД (12 баллов и более).

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