

PREVALENCE OF DIABETES AND PREDIABETES AND ITS RISK FACTORS IN ADULTS AGED 25-64 IN THE CZECH REPUBLIC: A CROSS-SECTIONAL STUDY

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Introduction: Diabetes mellitus (DM) is currently one of the most frequent metabolic disorders in the world with a prevalence among adults increasing globally over the last decades. The number of persons diagnosed with DM among the Czech population in 2016 was 929 945 (prevalence rate 8.8%), but the number of people with prediabetes is unknown. Also a detailed information about DM and pre diabetes risk factors related to the Czech population are unknown.

Aims: The aim of this study is to establish the prevalence of DM and prediabetes in the Czech population aged 25–64 years old and to evaluate the association with various cardiometabolic, sociodemographic, and lifestyle risk factors.

Materials and methods: Data from Czech EHES (European Health Examination Survey) conducted in 2014 were used for this analysis. This was a stratified, cross-sectional, cluster, random sampling epidemiological study. Sociodemographic, lifestyle, and anamnestic data were collected through professional interviewer-administered questionnaires, medical examination, and biochemical assays. One-way analysis of variance (ANOVA), the χ^2 -test and finally, the binary logistic regression were used to evaluate obtained data.

Results: Among the 1,189 participants (40% men, 60% women), 114 were diagnosed with DM (9.6%), 330 with prediabetes (27.8%) and 745 were non-diabetes/non-prediabetes individuals (62.7%). The prevalence of both, prediabetes and DM, significantly increased with age, the highest prevalence was found in the 55–64 years age group (40.1% in prediabetes and 18.0% in DM). Further, education was found as a strong determinant for prevalence of DM and prediabetes. Logistic regression analysis showed that overweight, general and abdominal obesity, hypertension, and lower level of HDL (increased risk) significantly increased the risk of both prediabetes and DM. Living in the cities decreased the risk of DM. Among life style variables the significantly increased risk of prediabetes and DM was found for smokers and ex-smokers.

Risk factors for prediabetes and diabetes in the adult population (aged 25–64), Czechia, 2014

Variables	Prediabetes risk			Diabetes risk			
	OR	CI95%	p-value	OR	CI95%	p-value	
Sociodemographic variables							
Sex	Male	1		1			
	Female	1.073	0.823–0.140	0.602	0.711	0.497–1.056	0.091
Age group	25–34	1		1			
	35–44	1.364	0.829–2.224	0.221	4.746	1.363–16.525	0.014
	45–54	4.162	2.612–6.630	<0.001	9.819	2.874–33.543	<0.001
	55–64	6.459	4.164–10.019	<0.001	28.969	8.972–93.531	<0.001
Education	Primary	2.467	1.374–4.429	0.002	3.359	1.399–8.063	0.007
	Vocational	1.317	0.913–1.901	0.141	2.599	1.446–4.670	0.001
	Secondary	1.205	0.843–1.726	0.306	1.049	0.554–1.988	0.882
	University	1			1		
Area of living/ Degree of urbanization	Cities	1		1			
	Towns/suburb/rural areas	1.088	0.815–1.454	0.564	1.706	1.045–2.791	0.033
Metabolic variables							
BMI categories	Normal	1		1			
	Overweight	1.419	1.007–1.200	0.046	2.700	1.280–5.690	0.009
	Obese	2.401	1.666–3.461	<0.001	9.864	4.817–20.200	<0.001
Waist circumference	Low risk	1		1			
	Increased risk	1.812	1.362–2.411	<0.001	5.387	3.279–8.846	<0.001
Blood cholesterol level	Low risk	1		1			
	Increased risk	1.418	1.040–1.939	0.027	0.908	0.574–1.439	0.684
High-density cholesterol	Low risk	1		1			
	Increased risk	2.057	1.306–3.239	0.002	5.397	3.118–9.343	<0.001
Hypertension	Yes	1.430	1.055–1.938	0.021	4.345	2.651–7.123	<0.001
	No	1			1		
Life style variables							
Smoking habits	Non-smoker	1		1			
	Ex-smoker	1.203	0.831–1.741	0.326	2.735	1.647–4.544	<0.001
	Smoker	1.374	1.002–1.886	0.049	1.457	0.859–2.471	0.162
Non-smoking lifetime prevalence	Non-smoker	1		1			
	Smoker or ex-smoker	1.306	0.989–1.723	0.060	1.996	1.290–3.088	0.002
Marijuana lifetime prevalence	yes/ever	1.118	0.649–1.925	0.688	0.317	0.073–1.370	0.124
	no/never	1			1		
Physical activity number of days with 10 min PA	0 days	0.979	0.655–1.465	0.921	1.684	0.792–3.580	0.175
	1–2 days	0.632	0.392–1.020	0.060	1.098	0.458–2.634	0.834
	3 and more days	1			1		
Frequency of alcohol drinking days per week	5–7 days	0.725	0.471–1.115	0.143	0.686	0.362–1.300	0.247
	1–4 days	0.771	0.600–1.060	0.110	0.861	0.528–1.404	0.548
	0 days	1			1		

Conclusion: The study shows a high prevalence of DM and prediabetes in the Czech population between the age of 25–64, providing data on their association with several risk factors.