Diabetes and obesity more common in socioeconomically deprived regions

Neuherberg, Berlin 28.02.2014. People who live in socioeconomically deprived regions are more often affected by type 2 diabetes and obesity. This is shown by a current analysis of data collected in the German telephone health interview survey GEDA conducted by scientists from the Helmholtz Zentrum München and the Robert Koch Institute in Berlin. The results have been published in the scientific journal ‘PLOS ONE’.

Living in a socioeconomically deprived region is a risk factor for being affected by diabetes mellitus and obesity. This holds true regardless of the individual social status of the inhabitants. This is the conclusion reached by scientists from the Institute of Health Economics and Health Care Management (IGM) at the Helmholtz Zentrum München (HMGU) and the Department of Epidemiology and Health Monitoring at the Robert Koch Institute (RKI) in Berlin. “Regional factors, such as the population’s average income, unemployment or quality of the living environment can affect the health of all inhabitants, regardless of the educational level of the individual people”, explains the lead author Werner Maier.

Under the leadership of Werner Maier in a team headed by Dr. Andreas Mielck and Professor Dr. Rolf Holle at the HMGU, the group of authors evaluated data from more than 33,000 people aged 30 years or more who participated in the RKI’s German telephone health interview surveys “German Health Update(GEDA)” in 2009 and 2010.

Residents of socioeconomically deprived regions suffer disproportionately from diabetes and overweight. This geographical influence is referred to as “regional deprivation”. It was determined based on the “German Index of Multiple Deprivation” (GIMD) which is formed from regionally available information on income, employment, education, municipal or district revenue, social capital, environment and security in a defined area. In addition to the GIMD, the data analysis also took into consideration individual risk factors such as age, sex, body mass index, smoking status, physical activity, education and living with a partner.
In the most deprived regions, the frequency of type 2 diabetes was 8.6 percent among those interviewed and that of obesity was 16.9 percent, compared to 5.8 and 13.7 percent, respectively, among those interviewed in regions that are only slightly deprived. These results were reviewed to determine relevant differences in all individual factors, with the final result showing that people in the areas with the greatest deprivation still had around a 20 percent greater probability to suffer from type 2 diabetes than men and women in the least deprived regions. In the case of obesity, there was even an almost 30 percent higher probability associated with greater deprivation. For women, high regional deprivation was a particularly influential independent factor for the occurrence of diabetes and obesity. In men, it was possible to show a statistically significant and independent correlation for obesity, but not for diabetes.

“Our results point out the significance of regional factors in association with common health problems such as diabetes mellitus and obesity in Germany”, explains Dr. Andreas Mielck from the HMGU. “Previous investigations in this area were frequently distorted by individual socioeconomic status, or only used data from a particular region or from outside Germany.” Werner Maier adds, “Area-based risk factors such as material and social deprivation are an important starting point in order to develop effective region-specific preventive measures.” Dr. Christa Scheidt-Nave from the RKI reports, “It is thanks to large, German-wide representative studies such as GEDA that we have current data on the epidemiology of chronic diseases such as diabetes available to us. For comprehensive prevention strategies, we must identify both regional and individual risk factors and also examine their interaction”.

According to the results of Germany-wide health monitoring, some six million people over the age of 18 years are currently affected by diabetes mellitus in Germany, with more than twice as many adults suffering from obesity.

Further Information

The epidemiological analyses were carried out as a part of the two institutes' cooperation project on diabetes mellitus and social inequality in the Competence Network for Diabetes Mellitus ('Kompetenznetz Diabetes mellitus'). The two institutes were supported within this research association by the Bundesministerium für Bildung und Forschung (German Federal Ministry of Education and Research). GEDA data are routinely collected within the framework of Germany-wide health monitoring at the RKI with funding from the Bundesministerium für Gesundheit (Federal Ministry of Health).

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As German Research Center for Environmental Health, Helmholtz Zentrum München pursues the goal of developing personalized medical approaches for the diagnosis, prevention and therapy
of major common diseases such as diabetes mellitus and lung diseases. To achieve this, it investigates the interaction of genetics, environmental factors and lifestyle. The Helmholtz Zentrum München has about 2,200 staff members and is headquartered in Neuherberg in the north of Munich. Helmholtz Zentrum München is a member of the Helmholtz Association, a community of 18 scientific-technical and medical-biological research centers with a total of about 34,000 staff members.

The Institute of Health Economics and Health Care Management (IGM) examines approaches to improving the effectiveness and efficiency of health care. The health care system faces the challenge of delivering high-quality and economically viable medical services to meet the needs of the population. Rapid advances in medical technology and fast-changing demographics further aggravate this problem. A firmly based evaluation of the effectiveness and efficiency of health care structures and processes is therefore an essential prerequisite for a rational health care policy.

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