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MONDAY, MARCH 16

Global economic impact of diabetes revealed in new study

Diabetes reduces people's employment chances and wages around the world – according to a new study from the University of East Anglia, supported by the Centre for Diet and Activity Research (CEDAR).

Researchers studied the economic impact of type II diabetes worldwide.

They were surprised to find not only a large cost burden in high-income countries, but also in low and middle-income countries - where people with diabetes and their families face high costs for treatment.

While it is widely known that diabetes poses a huge health challenge, awareness of its impact on the global economy and labour markets has never before been studied in such detail.

The research team looked at data from 109 studies in the largest and most up-to-date global review of the economic impact of diabetes.

Headline figures:

- People with diabetes in the US have the highest healthcare costs - with an estimated lifetime cost of around \$283,000. These costs are higher than in others countries with comparable per capita income levels.
- Worldwide, diabetes hits the poor hardest – with a higher cost burden for people in low and middle income countries.
- Two thirds of all new cases of diabetes are now in low and middle income countries such as China, India, Mexico, and Egypt.
- Men with diabetes have worse employment opportunities globally. The impact for women appears to be less adverse - except for in the US, where their employment chances decreased by almost half.
- The costs associated with diabetes increase over time with disease severity.

Lead researcher Till Seuring, from UEA's Norwich Medical School said: "Diabetes affects 382 million people worldwide, and that number is expected to grow to 592 million by 2035. It is a chronic disease that has spread widely in recent decades - not only in high-income countries, but also in many populous low and middle-income countries such as India and

China.

“The rising prevalence of diabetes in these countries has been fuelled by rapid urbanization, changing eating habits, and increasingly sedentary lifestyles.”

The review provides detailed information about both direct costs of the disease, such as doctor and hospital visits, medication, lab costs for tests, and equipment costs, as well as indirect costs such as income losses due to early retirement, and lost work hours due to illness.

“The characteristics of the economic burden vary from country to country depending on the health care system in place. In high income countries the burden often affects government or public health insurance budgets while in poorer countries a large part of the burden falls on the person with diabetes and their family due to very limited health insurance coverage.

“Our results show a considerable impact of diabetes in terms of costs to society, health systems, individuals and employers.

“This research provides a comprehensive picture of the economic impact of diabetes in poorer countries. The results show that people in these countries are the worst off because the economic burden on their livelihoods is much greater.

“Our findings underline the fact that diabetes not only has strong adverse effects on people's health but also presents a large - and at least partly avoidable - economic burden.

“We also found that the economic burden of diabetes increases over time. So early investments into prevention and disease management may therefore be particularly worthwhile.

“For both rich and poor countries, the results mean that better prevention and management of diabetes has the potential to not only bring good health but also economic gains.

“We would hope that the findings further increase the policy attention being paid to diabetes prevention and management in rich countries and it should in particular make health and economic policymakers in developing countries aware of the economic damage that diabetes can do.”

‘The economic costs of type 2 diabetes: a global systematic review’ is published in *PharmacoEconomics*. It is the result of collaboration between researchers from the University of East Anglia, University College London and the Centre for Health Economics at the University of York. The research is supported by the Centre for Diet and Activity Research (CEDAR).

ENDS

REPORT:

‘The economic costs of type 2 diabetes: a global systematic review’ is available for download from the following dropbox link:

<https://www.dropbox.com/sh/pkg5o90pvife1lw/AAC46CDFPOsIrtZzobGz8L8ea?dl=0>

This is intended for journalist reference use only and cannot be published in full.

A web link to the report from the journal's website will be available after the embargo lifts:

<http://link.springer.com/journal/40273>

VIDEO:

Videos featuring Till Seuring talking about his research are available in English, Spanish and German on the following Youtube links.

English version: <https://www.youtube.com/watch?v=-SxAyQad1SY>

Spanish version: <https://www.youtube.com/watch?v=RZ11iMSr5xU>

German version: https://www.youtube.com/watch?v=4DKhif0_2IY

They are also available for download from the following dropbox link:

<https://www.dropbox.com/sh/pkg5o90pvife1lw/AAC46CDFPOsIrtZzobGz8L8ea?dl=0>

Please note that these videos are currently private also under a strict embargo to 00.01 GMT (London time) TUESDAY, MARCH 17, 2015 / 20.01 US EST MONDAY, MARCH 16.

INFOGRAPHICS:

An infographic showing an overview of the main findings and a range of country-specific images highlighting key figures (including the US, Canada, UK, India, China and many more) are available for download from the following dropbox link:

<https://www.dropbox.com/sh/pkg5o90pvife1lw/AAC46CDFPOsIrtZzobGz8L8ea?dl=0>

A live link to the overview infographic will be available here after the embargo lifts:

<https://www.uea.ac.uk/about/media-room/infographics/diabetes>

Please note that these images are also a strict embargo to 00.01 GMT (London time) TUESDAY, MARCH 17, 2015 / 20.01 US EST MONDAY, MARCH 16.

SOCIAL MEDIA

The above country-specific images are designed for use on social media.

Hashtag: #globaldiabetes

Twitter handles: @uniofeastanglia @UEAresearch

Suggested tweets:

New research from @uniofeastanglia reveals the global economic impact of diabetes for the first time #globaldiabetes <http://bit.ly/18bwqQ9>

#UEA research shows diabetes reduces people's employment chances & wages around the world #globaldiabetes <http://bit.ly/18bwqQ9>

#UEA research shows people with diabetes in US have highest healthcare costs - \$283,000 lifetime cost #globaldiabetes <http://bit.ly/18bwqQ9>

Worldwide, diabetes hits the poor hardest #globaldiabetes @uniofeastanglia #research

Two thirds of new diabetes cases in low & middle income countries such as China, India, Mexico #globaldiabetes #UEA <http://bit.ly/18bwqQ9>

#UEA research shows men with diabetes have worse employment opportunities globally #globaldiabetes <http://bit.ly/18bwqQ9>

#UEA research shows the costs associated with diabetes increase over time with disease

severity #globaldiabetes <http://bit.ly/18bwgQ9>

Please note that these links are not yet live and the content is under a strict embargo to 00.01 GMT (London time) TUESDAY, MARCH 17, 2015 / 20.01 US EST MONDAY, MARCH 16.

COUNTRY SPECIFIC QUOTES:

Please note that all country-specific figures are based on 2011 amounts.

US

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "The US stands out as having particularly high costs with an estimated lifetime healthcare cost of around \$283,000 and \$6,800 in healthcare costs per year directly attributable to diabetes.

"These costs are higher than expected on the basis of GDP per capita. But they are in line with health care expenditure generally in the States.

"Employment chances for women with diabetes in the US are decreased by almost half. Women with diabetes also lose out on \$21,392 in earnings per year– the highest loss due to diabetes worldwide.

"Older employed people in the US experience an income loss of around \$4279 per year."

China

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "Two thirds of all new diabetes cases are now in low and middle income countries such as China.

"The rising prevalence of diabetes in these countries has been fuelled by rapid urbanization, changing eating habits, and increasingly sedentary lifestyles."

"Diabetes costs could almost double over the next 15 years – to more than 558 billion Chinese Yuan (US \$132 billion) in 2030.

"Healthcare costs per capita are more than three times higher for people with diabetes in China than those who do not have the disease.

"We found that Chinese men with diabetes earn 22 per cent less than their healthy counterparts. And that the poorest third of the population are worst hit financially."

India

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "Two thirds of all new cases of diabetes are now in low and middle income countries such as India.

"The rising prevalence of diabetes in these countries has been fuelled by rapid urbanization, changing eating habits, and increasingly sedentary lifestyles."

"People in India with diabetes experience a cost burden of up to 35986 Indian Rupees (US \$1800) per year.

"We also found that there are large differences in expenditures between the rich and the poor, as well as between urban and rural regions."

Canada

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "In Canada, we expect to see diabetes costs more than double by 2035.

"The excess per capita healthcare costs due to diabetes comes to at least \$3090 Canadian dollars (US \$2500) per year.

"We also saw that men with diabetes are 19 per cent less likely to be employed, and women are 17 per cent less likely to be employed."

Mexico

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "Two thirds of all new diabetes cases are now in low and middle income countries such as Mexico.

"The rising prevalence of diabetes in these countries has been fuelled by rapid urbanization, changing eating habits, and increasingly sedentary lifestyles."

"Around \$16 billion Mexican Dollars (US \$1066 million) are spent on diabetes annually. And out-of-pocket expenditures account for half of total healthcare costs."

Australia

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "Diabetes costs in Australia could triple by 2050. Men with diabetes in Australia are less likely to be employed."

Colombia

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "The lifetime cost of diabetes for a patient in Colombia comes to around 71.87 million Colombian pesos (US \$54,351).

"The total cost for the whole country annually comes to 7008 billion Colombian pesos (US \$5.3 billion)."

Iran

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "Diabetes costs more than 2266 billion Iranian Rials (US \$400 million) in the capital Teheran alone each year."

"People with diabetes in Teheran are likely to pay more than 2.8 million Iranian Rials per year (US \$500) in costs directly attributable to the disease."

UK

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "People in the UK with diabetes experience an income loss of £887 per year. But it is carers in the UK who are the worst hit financially, with a reduction in income of £1327 annually."

France

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "In France we found that healthcare costs of more than €2039 (US \$2241) per capita are directly attributable to diabetes.

"People with diabetes who are aged between 35 and 60 typically lose one year out of the workforce."

Germany

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "Germany spends on average €2759 (US \$3261) on each person with diabetes annually via public health insurance."

Sweden

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "People with diabetes spend around 20822 Swedish Krona (US \$2243) on healthcare costs annually.

"This study also showed that people with diabetes take nine more sick days per year than colleagues without health problems."

Italy

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "In Italy, the healthcare costs for people with diabetes are three times more than for people without."

Japan

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "In Japan, diabetes healthcare costs per capita are almost double the costs for people without diabetes.

Norway

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "Diabetes costs Norway in the region of 3355 million Norwegian Krona (US \$319 million) each year – for medical care and other indirect costs.

Pakistan

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "We found that having diabetes costs patients in Karachi more than 24861 PKR (US \$700) per year. The poor in particular are worst hit and have to spend about 18% of their annual income on diabetes treatment."

Poland

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "In Poland, more than 6 billion Polish złoty (US \$3 billion) are spent on the costs of diabetes per year.

"About 2.8% of the country's total healthcare costs are due to diabetes."

Serbia

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "In Serbia, we can see that people with diabetes spend more than 78312 Serbian dinars on costs related to the disease."

Spain

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "There is a lack of recent research in Spain, but the most recent figures from 2002 show that healthcare costs associated with diabetes amounted to € 1862 (US \$2466) per person with diabetes. This comes to almost €5 billion nationally."

Sudan

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "In Sudan, the healthcare costs of diabetes amounted to 937 Sudanese pounds (US \$456) per person. The majority of this cost is paid out-of-pocket."

Taiwan

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "In Taiwan, elderly people with diabetes have healthcare costs of over NT\$ 148819 (US \$6300), which is considerably higher than their healthy counterparts."

"We also saw that employment chances of people with diabetes are significantly reduced in Taiwan, particularly for men."

Thailand

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "In Thailand, diabetes costs around 30092 Thai bahts (US \$1700) per patient each year. This equates to 21 per cent per capita GDP."

United Arab Emirates

Lead researcher Till Seuring, from UEA's Norwich Medical School, said: "The healthcare costs of diabetes are on average 29679 dirhams (US \$5585) per patient annually."

"Research shows that once complications are present, the healthcare costs increase to 38255 dirhams (US \$7199)."

EDITOR'S NOTES

1/ For more information or to arrange an interview, please contact Lisa Horton in the UEA press office on +44 (0)1603 592764 or email l.horton@uea.ac.uk.

2/ The University of East Anglia (UEA) is among the top 1% of universities globally (Times Higher Education World Rankings 2014-15) and placed 10th in the UK for the quality of its research output (Research Excellence Framework 2014). Also known for its outstanding student experience, it has achieved a Top 10 rating in the National Student Survey every year since the survey began. UEA is a leading member of the Norwich Research Park - one of Europe's largest concentrations of researchers in the fields of environment, health and plant science. The city of Norwich boasts more highly cited scientists than any UK city outside London, Oxford and Cambridge. www.uea.ac.uk.

3/ Norwich Medical School at UEA has an excellent reputation for exciting and innovative

medical education and a strong and rapidly developing research programme. On average, over 85 per cent of UEA health research was rated as world-leading or internationally excellent in the Research Excellence Framework (2014). UEA graduates reported that they were the best-prepared doctors according to the General Medical Council's State of Medical Education and Practice in the UK report (2014).

www.uea.ac.uk/med

4/ The Centre for Diet and Activity Research (CEDAR) is studying the factors that influence dietary and physical activity related behaviours, developing and evaluating public health interventions, and helping shape public health practice and policy. CEDAR is one of five Centres of Excellence in Public Health Research funded through the UK Clinical Research Collaboration, and is a partnership between the University of Cambridge, the University of East Anglia and MRC Units in Cambridge. The Centre acknowledges the support of the Medical Research Centre, National Institute for Health Research, Wellcome Trust, British Heart Foundation, Cancer Research UK, the Economic and Social Research Council, and the University of Cambridge. www.cedar.iph.cam.ac.uk