Diabetes

Is the incidence of diabetes declining?

A recent systematic review, published in the *BMJ*, has concluded that in countries where data is available the incidence of diabetes has been stable or falling since 2006.

The authors performed a systematic review of studies reporting trends of diabetes incidence. The PRISMA checklist for systematic reviews was used to search multiple databases including Medline, Embase and CINAHL for suitable studies from 1980 to 2017. Studies of open population-based cohorts, diabetes registries and administrative and insurance databases that reported secular trends of diabetes were included. Eligible studies had to report total diabetes or type 2 diabetes incidence in two or more time periods.

Of 22,833 screened abstracts, 47 studies were included in the analysis. The countries represented in the studies were: Canada, China, Denmark, Finland, Germany, Hong Kong, Iceland, Israel, Italy, Korea, Mauritius, Nauru, Netherlands, Norway, Portugal, Scotland, Sweden, Switzerland, Taiwan, UK and USA.

Trends in incidence of diabetes

1960-89
- 36% of the populations studied had increasing trends
- 55% had stable trends
- 9% had decreasing trends

1990-2005
- 66% had increasing trends
- 32% had stable trends
- 2% had decreasing trends

2006-2014
- 33% had increasing trends
- 30% had stable trends
- 36% had declining trends

The incidence of diagnosed diabetes increased in most populations up to the early 2000s. The majority of the populations studied showed stable or reducing incidence of diabetes from the mid 2000s.

Countries reporting a decrease in incidence over this period included the USA, Israel, Switzerland, Hong Kong, Sweden and Korea. Stable incidence was reported from the UK, Canada, Italy, Scotland, Norway, and the USA (non-hispanic white).

Increasing incidence was only found in Portugal, Denmark and Germany.

The authors acknowledge that the systematic review could not adjust for different diagnostic thresholds for diabetes, and sometimes for diabetes type, although type 2 diabetes is always the most common. The data were limited in low- and middle-income countries.

Even with these caveats, this paper has interesting messages about the paridigm of the diabetes epidemic. The authors point out that prevalence of type 2 diabetes may increase because of improved survival, and that the simultaneous decline in incidence could be a reduction in the pool of undiagnosed diabetes patients, together with improving health awareness.

They cite increases in exercise from interventions at schools and workplaces, reductions in the consumption of sweetened beverages and active diabetes prevention programmes as examples of interventions that may have reduced the incidence of diabetes.

We have tended to feel that the rising trends in childhood obesity, and the traditional statistics of the large pool of undiagnosed diabetes have been part of an uncontrollable diabetes epidemic.

This paper may suggest that there are some grounds for cautious optimism about the future, especially in conjunction with the accumulating evidence for changes in lifestyle preventing, and even reversing, diabetes.

DR MATTHEW LOCKYER

Magliano DJ, Islam RM, Barr ELM et al. Trends in incidence of total or type 2 diabetes: systematic review. *BMJ* 2019;366:l5003

Smoking cessation

Quitting smoking in pregnancy lowers risk of preterm birth

Smoking cessation in pregnant women is associated with a reduced risk of preterm birth, a large study from the United States has shown.

Information was obtained from live birth certificates issued between 2011 and 2017 as part of the US National Vital Statistics System. Overall, 25,233,503 pregnant women who delivered live neonates and had data recorded on pre-pregnancy and trimester-specific cigarette smoking frequency were included in the analysis.

Smoking frequency was categorised as 0, 1-9, 10-19, and ≥20 cigarettes per day three months prior to pregnancy and in the first, second, or third trimesters.

The modal age at delivery was 25-29 years, with 52.9% of study subjects non-Hispanic white, 23.6% Hispanic and 14.2% non-Hispanic black women. A quarter of the women were high school graduates, 60% had some college education, 60% were married and 33% received social benefits.

The proportion of women who smoked during the three months prior to pregnancy was 10.4%. Only around 1 in 4 women who smoked before pregnancy quit smoking throughout pregnancy.

An increase in the proportion of preterm births with smoking frequency was found in each trimester. For example, in the first trimester, the proportion was 14.4% for those who smoked 1-9 cigarettes per day, 14.8% for those who smoked 10-19 cigarettes per day, and 16.0% for those who smoked ≥20 cigarettes per

day. In third trimester smokers, the probability was 14.5% for those who smoked 1-9 cigarettes per day, 15.0% for those who smoked 10-19 cigarettes per day, and 16.6% for those who smoked ≥20 cigarettes per day.

The probability of preterm birth decreased the earlier smoking cessation occurred in pregnancy. For example, the probability of preterm birth was 9.8% (95% CI: 9.7-10.0%) in 25-29 year-old non-Hispanic white primigravida who smoked 1 to 9 cigarettes per day before pregnancy and maintained this frequency throughout their pregnancy. The probability of preterm birth was 9.0% (95% CI: 8.8-9.1%) if smoking cessation occurred at the start of the second trimester (an 8.9% relative decrease), and 7.8% (95% CI: 7.7-8.0%) if cessation occurred at the start of pregnancy (a 20.3% relative decrease).

The study authors conclude that smoking cessation may be especially difficult for pregnant women. However, quitting – and quitting early in pregnancy – was associated with reduced risk of preterm birth.

DR PETER SAUL

Soneji S, Beltran-Sanchez H. Association of maternal cigarette smoking and smoking cessation with preterm birth. *JAMA Network Open* 2019;2(4):e192514

Sexual health

Where do patients seek help for genitourinary symptoms?

The majority of patients with genitourinary (GU) symptoms do not attend sexual health clinic (SHCs), although many would consult their GP, an analysis of Natsal-3 survey data has shown.

Natsal-3 is a probability sample survey of sexual behaviour involving 15,162 women and men in Britain aged 16-74 years.

In this study, 1,403 participants (1,182 women) aged 16-44 years had experienced specific GU symptoms in the past four weeks. To estimate unmet need for sexual healthcare, the prevalence of non-attendance at SHCs was calculated for those who reported symptoms. Hypothetical service preferences of these participants were also determined.

Semi-structured interviews were conducted with 27 Natsal-3 participants (16 women) aged 19-47 years who had never attended an SHC to examine the reasons for non-attendance. This was carried out 22-44 months after the initial survey fieldwork.

The majority of women 85.9% (95% CI: 83.5-87.9%) and men 87.6% (95% CI: 82.3-91.5%) had not attended an SHC in the past year.

As a hypothetical care provider for sexually transmitted infections (STIs), general practice was preferred for both women 58.5% (95% CI: 55.2-61.6%) and men 54.3% (95% CI: 47.1-61.3%) who reported symptoms. Those who had previously attended an SHC were more likely to go back to one as their preferred service.

Those who thought symptoms might be problematic tried to self-diagnose or self-treat by buying over the counter products, changing their diet or reducing alcohol consumption. Overall, 16 of the 27 interviewed who had not consulted an SHC did seek help elsewhere and more than half went to see their GP. Women were better at seeking care as they were already engaged with healthcare providers for women's health issues.

A quarter of symptomatic individuals did not seek healthcare from any service. Some were selective about which symptoms were important enough to seek advice, others thought they would go away, but stigma and structural barriers (real or perceived) were factors influencing why they chose not to seek care.

Individuals went through four strategies to deal with their symptoms; starting with normalising symptoms, seeking further information, then escalating to attempting self-treatment, before actively seeking care at a service depending on perceived cause and level of concern.

Timely access to testing, diagnosis and treatment of STIs can improve symptoms, reduce complications and reduce infectivity. From this probability sample survey, an SHC is not always the first choice, for whatever reason, for many people with symptoms suggestive of an STI.

In fact, many would seek further advice and care from general practice. It is important therefore for primary care staff including GPs and nurses to be equipped with the knowledge and skills to manage an unmet need for sexual health problems in the population.

DR RICHARD MA

Mapp F, Wellings K, Mercer CH et al. Help-seeking for genitourinary symptoms: a mixed methods study from Britain's Third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *BMJ Open* 2019;9:e030612

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