TRENDS IN SOCIAL INEQUALITIES IN OBESITY: BELGIUM, 1997 TO 2004

INTRODUCTION

In the last two decades, an alarming increase in the prevalence of overweight and obesity has been reported in the US and Europe. Together with this increase, a dramatic socioeconomic gradient has been observed where obesity declines with increasing socioeconomic level. Studies in Belgium show a comparable situation, but the question remains whether this socioeconomic status (SES) gradient is increasing overtime.

The aim of this study, which was done in the framework of the TAHIB project (Tackling Health Inequalities in Belgium), is to examine the recent trends in SES inequalities in obesity by gender using three successive waves of the Belgian Health Interview Survey (HIS; Epi-Scoop 2006, nr. 3) that were carried out in 1997, 2001 and 2004 (N=8075, 9399 and 10,330, respectively).

OBJECTIVE

The aim of this study, which was done in the framework of the TAHIB project (Tackling Health Inequalities in Belgium), is to examine the recent trends in SES inequalities in obesity by gender using three successive waves of the Belgian Health Interview Survey (HIS; Epi-Scoop 2006, nr. 3) that were carried out in 1997, 2001 and 2004 (N=8075, 9399 and 10,330, respectively).

METHODS

Obesity was defined in accordance with WHO criteria (1995): subjects with body mass index ≥ 30 (estimated from self-reported weight and height) were considered obese. The SES was determined based on the highest level of education achieved (primary education or less, lower secondary, higher secondary, higher education). Several measures of inequality were used: (1) the prevalence difference between the lowest and highest educational groups; (2) the population attributable risk (PAR) which is an estimate of the proportional reduction in the overall prevalence of obesity that would occur in the hypothetical case that everyone experiences the rates of the highest educational group; (3) the relative risk (RR) between the lowest and highest educational group and (4) the relative index of inequality (RII) that can be interpreted as the relative risk of being obese at the bottom of the educational hierarchy compared to the risk at the top of the hierarchy. This measure has the advantage of accounting for the changes between cohorts in the population size and in the relative socioeconomic position of each group. The age-adjusted RR and RII were calculated with a weighted binomial regression model for each gender. The relative change in the summary measures was assessed by dividing the measure of the year 2004 by the 1997 one. All analyses were weighted for the Belgian population.

RESULTS

In men, the four summary measures point out the existence of a clear SES gradient between obesity and education where obesity declines with increasing educational level (Table 1). Moreover, all indicators point out to an increase in socioeconomic inequalities between 1997 and 2004. The prevalence difference increased by 71% of its initial value. The PAR and the RR both increased by about 40% of their initial values. The RII increased from 1.92 to 3.71, which implies an increase of 93% of its initial values.

A different pattern is observed for female obesity. The initial gradient by SES is very steep. Comparing 1997 to 2004, we observe no significant change in inequalities by educational level. Prevalence difference increased by 19% of its initial value, but the other three measures showed no significant change.

DISCUSSION AND CONCLUSIONS

Using three comparable nation-wide population-based surveys, our study has shown that in Belgium from 1997 to 2004, the SES gradient in obesity has significantly increased for males and persisted for females. Also, our results indicate that compared to women, men initially had a low SES gradient in obesity but it is catching up with the very steep SES gradient in female...
In 2001, we briefly presented the infectious diseases surveillance programme by the Sentinel Laboratory Network, coordinated by the Epidemiology Unit of the IPH since 1983 (Epi-Scoop 2001, nr. 2) and in 2006 we described a number of recent trends observed during that year (Epi-Scoop 2006, nr. 2). This article now offers a review of the trends of 2008, as compared with the situation in previous years.

**Methods**

In 2008, 103 microbiology laboratories participated in this surveillance network, thus accounting for 60% of all accredited microbiology laboratories, spread out in 34 of the country’s 39 districts in which at least one accredited microbiology laboratory is located. This network can be considered as covering an estimated 70% of the tests carried out by all microbiology laboratories in the country.

Epidemiological data about registered microorganisms are transmitted to the IPH by means of weekly notification forms (N=66), via files extracted from the laboratories’ databases (N=20), the surveillance software « Epi-Lab » (N=7) or a protected Internet site (N=10); these 2 IT tools have been developed by the Epidemiology Unit.

**Results**

1. **Sexually transmitted infections**

   A significant increase with a linear trend in the number of *Chlamydia trachomatis* (In 2000: N=689, in 2008: N=2,601), *Neisseria gonorrhoeae* (in 2000: N=145, in 2008: N=718) and *Treponema pallidum* (in 2002: N=114, in 2008: N=480) has been noticed since 2000 (p<0.05; Figure 1). This increase was observed in Brussels and the district of Antwerp in particular. To some extent, it is due to the reimbursement of molecular diagnostic methods for *N. gonorrhoeae* since 2000 and for *C. trachomatis* since 2001. Another explanation for the increase in the number of tests could also be that the medical profession as well as the population as a whole have become aware of the evolution of these infections. A similar increase is observed in other European countries (see http://www.iph.fgov.be/epidemio/epien/aidsen/d_2009_2505_19.pdf). Clearly, the implementation of preventive measures must be pursued, if not reinforced, so as to limit the spreading of these sexually transmitted infections.
2. Respiratory tract infections

From 2000 to 2007, the Respiratory Syncytial Virus (RSV) showed a very regular seasonality, with the number of cases increasing from week 40, i.e. at the beginning of October, peaking during week 50, i.e. at the beginning of December, and gradually decreasing until week 15, i.e. at the end of March. The “European Influenza Surveillance Scheme” (EISS – www.eiss.org) starts registering influenza and RSV infections in week 40. In 2008, the rise began 2 weeks earlier than in the previous years, i.e. in week 38 and the peak was also reached 2 weeks earlier, i.e. in week 48 (Figure 2). This shift also took place in France in 2008. It will be interesting to see whether the forthcoming years bring about any confirmation of these changes. On that basis a decision could be made as to whether the prophylactic treatment for children exposed to a serious risk of contracting the RSV should be administered earlier. The analysis of the meteorological parameters prevailing in the ambient air at national level such as temperature, humidity and the concentration of fine particles does not give any explanation of the shift in the RSV seasonality.

3. Gastrointestinal infections

The notification of Rotavirus resumed in 2005 with a view to collecting sufficient data before the marketing of two new vaccines in June 2006 (RotaTeq®) and in June 2007 (Rotarix®) (Epi-Scoop 2006 nr. 3). Since January 2007, the cost of the vaccination against Rotavirus is reimbursed for children aged 2-6 months. During the 2 years preceding the vaccination (2005-06), the average number of diagnosed cases amounted to 9,034 (in 2005: N=9,418; in 2006: N=8,650) and the peak was observed at the beginning of the months of March and February, respectively. Since the vaccines have been marketed, one can see a decrease in the number of cases for a comparable number of laboratories having participated in the surveillance (in 2007: N=4,228, in 2008: N=3,453, which is an average 3,840, and thus a drop of 57%).

As compared with the previous years, the peak experienced a marked shift in 2007 as the maximum number of cases was reached by mid-April, but not in 2008 (mid-March; Figure 3).
Further details about vaccines can be obtained from your doctor or on the website of the Superior Health Council: www.health.fgov.be/csh_hgr.

SPREADING OF DATA
The Epidemiology Unit of the IPH publishes monthly and annual reports as well as information leaflets on the website http://www.iph.fgov.be/epidemio/epifr/index8.htm; it also organises, every year, a seminar on the theme « Diagnosis and surveillance of infectious diseases ». The seminar’s objective is to inform people working in laboratories, more particularly the representatives of the sentinel laboratories, in clinics, and those active in the fields of hospital hygiene and public health, about the recent major trends in the epidemiology of communicable diseases, the national data available on emerging diseases and the new infectious diseases diagnostic techniques.

This year, we will celebrate the 25th seminar on the 26th of November 2009 at the Centre Culturel et de Congrès in Woluwé-St-Pierre. We suggest that you mark that date in your agenda right now. One of the themes of this year’s seminar will highlight some of the striking points derived from the data collected by this network. The programme will be available on our site soon.

CONCLUSIONS
The surveillance of infectious diseases by the Sentinel Laboratory Network is a tool of crucial importance at national and even international level, as it makes it possible to keep abreast of the evolution of a number of microorganisms and to detect the presence of infection outbreaks.

If you wish to participate in this network’s activities or if you wish more detailed information, please feel free to get in touch with us.

Geneviève Ducoffre

BELGIAN NUTRITION SOCIETY INAUGURATED

Belgium, as other countries, faces a number of important public health problems rooted in nutrition. To effectively address these prevailing nutritional problems, consolidated scientific action is necessary. Due to the lack of a forum allowing Belgian nutritional scientists to communicate effectively, a new society, the Belgian Nutrition Society (BNS), has been established recently.

The BNS aims to be an interdisciplinary network of active scientists in the field of human nutrition. Its main objectives are to stimulate scientific research in the field of human nutrition, to foster collaboration between Belgian scientists working in this area, to disseminate scientific knowledge with regard to human nutrition for the enhancement of public health, to be a reference point for information concerning human nutrition, and to advocate research in human nutrition and the implementation of policies and practices related to public health nutrition. Until December 2008, such scientific organisation did not exist in Belgium.

The official launch of the BNS took place in Brussels on 18 December 2008. The programme featured representatives from international umbrella organisations in the field of nutritional sciences such as the Federation of European Nutrition Societies. The BNS Executive Board was introduced and the objectives and scope of the organisation were presented.

If you want more information or if you are interested to become a member of this society, please contact us by e-mail at info@belgiannutritionssociety.be or visit our website at www.belgiannutritionssociety.be

Stefanie Vandevijvere

Figure 3 : Evolution of the number of cases of Rotavirus (2005-2008); Sentinel Laboratory Network

![Graph of Rotavirus cases from 2005 to 2008]

0 / 4 weeks
4000
3000
2000
1000
0
2005 2006 2007 2008
N / 4 weeks