determinants of a problem, the problem itself, and predicted changes in the problem situation[5]. The theoretical model underpinning this intervention study was not described. A theoretical model enables a systematic, evidence-based approach to planning and an explicit consideration of how change will be brought about and measured[6]. In this intervention, while the aim was to reduce the prevalence of overweight and obesity in the community, it is unclear how this was to be achieved, or whether any socio-behavioural theory was employed to guide strategies for individual and community change processes.

Specification of a programme or 'treatment' theory is required to make explicit the processes and pathways by which a project is to achieve its objectives[6]. In this study, the nature of the intervention components was not adequately described, nor the 'dose(s)', nor how community structures facilitated implementation, penetration and uptake of the intervention components.

Demonstrating beneficial change in potentially mediating variables such as diet and physical activity affecting overweight and obesity would have strengthened the conclusions that can be drawn from the study and thus indicate how the intervention worked. The authors note that data on diet and physical activity were collected in the Fleurbaix Laventie Ville Sante II study, but later state as a limitation that 'the absence of measurement of mediating variables prevents us from defining which aspects of the interventions were actually effective'. This is confusing. Behavioural data on potential mediators were available from 1997 onwards and could conceivably have been included in the longitudinal analyses reported in Table 1.

Regarding evaluation, information was not given on the selection process for intervention and control communities, or of important characteristics of communities such as population size and baseline prevalence of overweight and obesity across age groups.

The authors improved the sensitivity of their statistical analyses by correctly accounting for multiple within-subject measurements. They did not however account for the intra-class correlation of individuals within communities nor of students within schools. Only the latter point was conceded as a limitation; the authors state that school-level clustering could not be dealt with as they did not have data on the schools attended by students. This seems strange, as the interventions and measurements were entirely school-based. The impact of clustering is important to consider as it acts to reduce statistical power and any basis for inference.

These and other challenges to evaluating the effectiveness of community trials are well documented. They also include analytic inefficiencies, unbalanced data, attrition from longitudinal cohorts, differential representation in successive cross-sectional samples (relevant to the social class 'effects' noted in this study), and ecological and individual-level bias[7]. Threats to validity, and alternative explanations for the results reported, were not adequately dealt with by the authors. It is not possible to assess whether factors other than the intervention could have yielded a changing prevalence of overweight and obesity between the intervention and control communities, or if the intervention is generalisable to different communities.

Given the potential significance of this study as a model for multi-level solutions to obesity among youth, and potential assumptions about the causal basis of its effects, we ask the authors to respond and also to publish a more detailed description to enable a transparent assessment of the intervention, basis for inference on its results and potential generalisability elsewhere.

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Moving in the same direction

Madam

We appreciate the opportunity to respond to the above letter regarding our findings on the downward trend in childhood obesity in the populations of Fleurbaix and Laventie in France[1].

Yes, the theoretical model underpinning the intervention study is not described. But the aim of our paper was not to describe an intervention study designed to reduce the prevalence of obesity. The two towns were the setting of three consecutive studies, none of which was designed to prevent childhood obesity. The first evaluated the effect of a school-based nutrition programme on family habits. This programme was designed to improve children's knowledge of foods and food processing. This programme was elaborated in 1991, when in France childhood obesity was not seen as a challenge, and physical activity was not targeted at all during this period.

The next study was an observational study about the determinants of body fat mass changes and several papers were published on this topic[2–7]. As Katan[8] pointed out, it was not a randomised controlled trial based on a treatment theory, it was an observational study.

We had the opportunity to monitor a population exposed to a nutritional information programme for 12 years and during this period, while childhood obesity prevalence was increasing all over the world and also in France, particularly in northern France where the study was located[9], we observed a progressive decline in childhood overweight prevalence from 2000 to 2004.

During these studies, families living in these towns were given regular questionnaires about food habits and physical activity that may have sensitised them and there was an increasing commitment of the community at large, including various stakeholders, about 'healthy lifestyles'. In 2004, we measured children's body fat mass both in Fleurbaix and Laventie and in two comparison towns in the same geographical environment which, while not strictly 'control' towns, had similar sociodemographic characteristics and population sizes.

The confounding of several intervention components, and the relatively weak study design, do indeed not allow for the evaluation of independent effects or the interaction between intervention components. However we think that this observation needed to be published, if only because it indicates the importance of having all local stakeholders move in the same direction.

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