Worldwide relation between the number of McDonald’s restaurants and the prevalence of obesity

Dear Sir,

Obesity is a worldwide health problem. Fast food is widely considered to be responsible for obesity. McDonald’s is a symbol of such fast food [1]. However, the global relation between fast food availability and obesity is unclear [2]. The aim of this study was to determine whether there is a correlation between the number of McDonald’s restaurants and the prevalence of obesity worldwide.

In total, 44 countries were included in the present study. This group comprised the 20 most populated countries of the world, the five most populated countries of each continent and a few other countries that were included in a recent nutritional study [3]. The number of McDonald’s restaurants per million inhabitants was calculated for each of these countries (www.mcdonalds.com). Countries were classified according to quartiles of the number of McDonald’s restaurants per million inhabitants. The proportion of overweight persons according to each of these quartiles was calculated using World Health Organization data [4]. The correlation between the proportion of overweight individuals and the number of McDonald’s restaurants per million inhabitants was investigated.

The study population was approximately 5500 million, corresponding to 75% of the world population. A total of 31 045 McDonald’s restaurants were located in these countries corresponding to approximately 95% of the total number of McDonald’s restaurants in the world. There were between 0 and 45 (in the USA) McDonald’s restaurants per million inhabitants. We found that there was a very strong correlation between the number of McDonald’s restaurants and the proportion of overweight individuals in the 44 countries \((R^2 = 0.95)\) (Fig. 1), although we did not establish a causal relationship.

Indeed, worldwide Mac Donald’s restaurants implantation probably follows a trend in alimentation behaviour changes. It is an accompaniment of such changes. Consequently, the potential impact of decreasing the number or even a total lack of Mac Donald’s restaurants removal remains unknown. Furthermore, this highly solid robust relationship indicates that the number of Mac Donald’s restaurants implantation is a strong local indicator of obesity risk. Following this indicator could help to evaluate the onset obesity in a given population.

Finally, other countries and other fast food restaurants, in addition to McDonald’s, should have been included in the present study; however, it is highly unlikely that this would have changed the overall findings. Indeed, including 75% of the world population and 95% of McDonald’s restaurants was likely to produce reliable results.

Conflict of interest statement

No conflict of interest was declared.

Authors’ contributions

FL designed the study and analysed the data, SM collected the data, AA wrote the first draft of the manuscript and KT and FA were responsible for overseeing the study. All authors have seen and approved the final version of the manuscript.
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