



Letter to the editor

Reply to the letter to the editor: “Socioeconomic status and childhood metabolic syndrome”



Isabel Iguacel^{a,b,c,d,*}, Nathalie Michels^e, Wolfgang Ahrens^{f,g}, Karin Bammann^{f,h}, Gabriele Eiben^{i,j}, Juan M. Fernández-Alvira^{a,k}, Staffan Mårildⁱ, Dénes Molnár^l, Lucia Reisch^m, Paola Russoⁿ, Michael Tornaritis^o, Toomas Veidebaum^p, Maike Wolters^f, Luis A. Moreno^{a,b,c,d,2}, Claudia Börnhorst^{f,2}, on behalf of the IDEFICS consortium

^a GENUD (Growth, Exercise, NUtrition and Development) Research Group, Faculty of Health Sciences, University of Zaragoza, Edificio del SAI, C/Pedro Cerbuna s/n, 50009 Zaragoza, Spain

^b Instituto Agroalimentario de Aragón (IA2), Zaragoza, Spain

^c Instituto de Investigación Sanitaria Aragón (IIS Aragón), Zaragoza, Spain

^d Centro de Investigación Biomédica en Red de Fisiopatología de la Obesidad y Nutrición (CIBEROBN), Zaragoza, Spain

^e Department of Public Health, Ghent University, Ghent, Belgium

^f Leibniz Institute for Prevention Research and Epidemiology – BIPS, Bremen, Germany

^g Institute of Statistics, University of Bremen, Bremen, Germany

^h Institute for Public Health and Nursing Sciences (IPP), University of Bremen, Bremen, Germany

ⁱ Section for Epidemiology and Social Medicine (EPSO), Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden

^j Department of Biomedicine and Public Health, School of Health and Education, University of Skövde, Skövde, Sweden

^k Fundación Centro Nacional de Investigaciones Cardiovasculares Carlos III (CNIC), Madrid, Spain

^l Department of Paediatrics, University of Pécs, Pécs, Hungary

^m Copenhagen Business School, Copenhagen, Denmark

ⁿ Institute of Food Sciences, National Research Council, Avellino, Italy

^o Research and Education Institute of Child Health, Strovolos, Cyprus

^p Department of Chronic Diseases, National Institute for Health Development, Tallinn, Estonia

ARTICLE INFO

Article history:

Received 9 February 2019

Accepted 20 February 2019

Reply to the letter to the Editor

We thank Dr. Kawada for their insightful and interesting comments on our article. Regarding your first question, we checked in our papers whether there were sex differences in the association between indicators of socioeconomic status (SES) and weight status or further components of the metabolic syndrome (MetS). We did not find any sex-SES differences in IDEFICS, hence we never stratified by sex [1]. However, we agree that further studies should be conducted to better specify

this relationship. Regarding your second remark on ethnicity, we checked the independent effects of SES and ethnicity, where ethnicity was reflected by migrant status [2,3]. Although we did not find an association between parental migrant background and MetS, we did find that children whose parents had a migrant background were more likely to be obese when controlling for parental education and income. This suggests that being a migrant could be a vulnerable situation per se for obesity. Although obesity is a fundamental basis of MetS, the translation of such obesity findings to MetS findings depend on many other risk factors. For example, diet or physical activity levels might be better or worse depending on migrant origin [4]. Conflicting findings in literature on the consequences of migrant status might be due to different studied migrant situations. As stated in limitations, having a migrant background can affect very differently depending on the country of origin and the reasons to migrate. Therefore, further studies taking into account these differences are needed to better understand health inequalities.

Dr. Iguacel et al.

References

- [1] K. Bammann, W. Gwozdz, A. Lanfer, G. Barba, S. De Henauw, G. Eiben, et al., Socioeconomic factors and childhood overweight in Europe: results from the multi-centre IDEFICS study, *Pediatr. Obes.* 8 (1) (2013) 1–12.
- [2] I. Iguacel, J.M. Fernández-Alvira, W. Ahrens, K. Bammann, W. Gwozdz, L. Lissner, et al., Prospective associations between social vulnerabilities and children's weight status. Results from the IDEFICS study, *Int. J. Obes.* 42 (10) (2018) 1691–1703.

* Corresponding author at: GENUD (Growth, Exercise, NUtrition and Development) Research Group, Faculty of Health Sciences, University of Zaragoza, Edificio del SAI, C/Pedro Cerbuna s/n, 50009 Zaragoza, Spain.

E-mail address: iguacel@unizar.es (I. Iguacel).

¹ Isabel Iguacel takes responsibility for all aspects of the reliability and freedom from bias of the data presented and their discussed interpretation.

² These authors contributed equally and share the last authorship.

- [3] I. Iguacel, N. Michels, W. Ahrens, K. Bammann, G. Eiben, J.M. Fernandez-Alvira, et al., Prospective associations between socioeconomically disadvantaged groups and metabolic syndrome risk in European children, Results from the IDEFICS study. *Int. J. Cardiol.* 272 (2018) 333–340.
- [4] W. Labree, D. van de Mheen, F. Rutten, G. Rodenburg, G. Koopmans, M. Foets, Differences in overweight and obesity among children from migrant and native origin: the role of physical activity, dietary intake, and sleep duration, *PLoS One* 10 (6) (2015), e0123672.