



Letter by nabi regarding article, "attained educational level and incident atherothrombotic events in low- and middle-income compared with high-income countries".

Hermann Nabi

► To cite this version:

Hermann Nabi. Letter by nabi regarding article, "attained educational level and incident atherothrombotic events in low- and middle-income compared with high-income countries".. *Circulation*, 2011, 123 (20), pp.e605. 10.1161/CIRCULATIONAHA.110.000133 . inserm-00598533

HAL Id: inserm-00598533

<https://inserm.hal.science/inserm-00598533>

Submitted on 24 Nov 2011

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Title: Letter By Hermann Nabi regarding article "Attained Educational Level and Incident Atherothrombotic Events in Low- and Middle-Income Compared With High-Income Countries"

Hermann Nabi, PhD^{1*}

1. INSERM U.1018, Center for Research in Epidemiology and Population Health

*INSERM U.1018, Center for Research in Epidemiology and Population Health
16 Avenue Paul Vaillant Couturier
94807 Villejuif Cedex France
Tel : +33(0) 1 77 74 74 21
Fax: +33(0) 1 77 74 74 03
Hermann.Nabi@inserm.fr

To the Editor:

I read with great interest the recent study by Goyal et colleagues ¹ who examined the association between attained educational level (AEL) and incident atherothrombotic events in Low- and Middle- Income Countries (LMICs) comparatively to High-Income Countries (HICs); in men and women. The results revealed a clear inverse association between higher education and incidence of cardiovascular events in men from HICs, a modest inverse association in women from HICs, a modest positive association in men from LMICs, and no association in women from LMICs. The authors should be applauded for conducting this research that compares different regions of the world with regard to educational gradient in cardiovascular events.

However, I believe that the authors may have over interpreted their findings. The inference that “In contrast to HICs, higher AEL may not be protective against cardiovascular events in LMICs, particularly in women” is not supported by the data. For instance, there is absolutely no evidence that suggests an educational gradient (in either direction) in cardiovascular events in women from LMICs, even in the model adjusted only for age (hazard ratios in all education strata in table 3 were around 1).

Similarly, the statement that “these data suggest that promoting higher AEL among women in LMICs may be insufficient to protect them from cardiovascular disease, and interventions should be developed to ensure that women of all groups have adequate access to preventive measures and health care” is also not supported by the data. I was very surprised by this recommendation since it has been shown that educated individuals make better use of health-related information than those who are less educated, even in LMICs ²

There are at least two reasons that call for better interpretation of the findings by Goyal et colleagues. First, the LMICs entity includes countries that are at different stage of urbanisation and industrialisation. Furthermore, recent evidence suggests that the health gradient between the well educated and less educated changes as a function of the economic development and the increase in the overall level of income of a country ³. Thus,

it is not impossible that grouping all these countries together might have obscured the real association between AEL in LMICs and cardiovascular events in this study.

Second, recent evidence suggests that cardiovascular risk factors and events in LMICs are not more common in affluent and educated individuals. The INTERHEART study ⁴, one of the references used by the authors shows that low education is consistently associated with increased risk for acute myocardial infarction globally. What is more, a recent review ⁵ on the association between socioeconomic status (SES), of which education is a marker, and obesity in adult populations in developing countries has observed that the burden of obesity in developing countries tends to shift towards the groups with lower SES as the country's economic development increases.

To conclude, although cautious interpretation of the findings is preferable, this work remains an important contribution to an under-researched topic.

Disclosures: none

References

1. Goyal A, Bhatt DL, Steg PG, Gersh BJ, Alberts MJ, Ohman EM, Corbalan R, Eagle KA, Gaxiola E, Gao R, Goto S, D'Agostino RB, Califf RM, Smith SC, Jr., Wilson PW. Attained educational level and incident atherothrombotic events in low- and middle-income compared with high-income countries. *Circulation*.2010; 122: 1167-1175.
2. Kickbusch IS. Health literacy: addressing the health and education divide. *Health Promot Int*. 2001; 16: 289-297.
3. Chang CL, Marmot MG, Farley TM, Poulter NR. The influence of economic development on the association between education and the risk of acute myocardial infarction and stroke. *J Clin Epidemiol*. 2002; 55: 741-747.
4. Rosengren A, Subramanian SV, Islam S, Chow CK, Avezum A, Kazmi K, Sliwa K, Zubaid M, Rangarajan S, Yusuf S. Education and risk for acute myocardial infarction in 52 high, middle and low-income countries: INTERHEART case-control study. *Heart*. 2009; 95: 2014-2022.
5. Monteiro CA, Moura EC, Conde WL, Popkin BM. Socioeconomic status and obesity in adult populations of developing countries: a review. *Bull World Health Organ*. 2004; 82(12): 940-946.