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Renzo Bianchi

Université de Neuchâtel

Irvin Sam Schonfeld

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JobStress, Inflammation, and Atherosclerosis: A Reflection

Renzo Bianchi, PhD*

Institute of Work and Organizational Psychology, University of Neuchâtel, Neuchâtel, Switzerland

Irvin Sam Schonfeld, PhD, MPH

Department of Psychology, The City College of the City University of New York,
New York, New York

*Correspondence to: Renzo Bianchi, PhD, Institut de Psychologie du Travail et des Organisations, Université de Neuchâtel, rue Emile Argand 11, 2000 Neuchâtel, Suisse. E-mail: renzo.bianchi@unine.ch

The present correspondence paper concerns the following article: Xu W, Chen B, Guo L, Li Z, Zhao Y, Zeng H. 2015. High-sensitivity CRP: Possible link between job stress and atherosclerosis. *Am J Ind Med* 58(7):773-779.

In a recent cross-sectional study involving 731 Chinese workers, Xu et al. (2015) examined the relationship between *job stress*—assessed with the effort-reward imbalance questionnaire—and *inflammation*, as indexed by high-sensitivity C-reactive protein (hs-CRP). The authors found an association between job stress and hs-CRP in both male and female participants, and concluded that inflammation may be a mediator linking job stress and atherosclerosis. In our estimation, the authors' findings should be interpreted with caution due to some unnoticed methodological limitations.

Stress *in general* has been associated with inflammation and atherosclerosis (Sapolsky, 2004; Slavich and Irwin, 2014). While the authors specifically attribute the variations in hs-CRP levels that they observed among their participants to *job stress*, they did not assess and statistically control for *non-occupational stress*. Because of this omission, the variance in inflammation that can be specifically imputed to job stress remains unclear.

In addition, the authors indicate that they did not take socioeconomic status (SES) into account in their study because “the information about education or income was difficult to assess accurately” (p. 777). We note, however, that information on participants' job type was available (see p. 774) and could have been used as a proxy for SES. The link between SES and health—notably, cardiovascular diseases—is well-established (Rose and Marmot, 1981; Adler et al., 1994; Erikson and Torssander, 2008). The use of a job type-based proxy for SES may have helped control for this key factor.

The accumulation of inadequately controlled studies in occupational medicine has become a concern (Bianchi, 2016; Schonfeld and Bianchi, 2016). In our view, stronger efforts should be made to take into account both empirically identified and theoretically likely confounders in this research field. In particular, assessing the contribution of job-related factors to given outcomes of interest without simultaneously considering the role of relevant non-job factors is unwarranted. Our ability to produce knowledge about work and health may be impaired if the current trend is not corrected. Moreover, because of their lack of reliability, results from inadequately controlled studies can lead to our making ineffective, or even counter-productive, decisions in terms of public health policies.

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DISCLOSURE (AUTHORS)

The authors report no conflict of interest.

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