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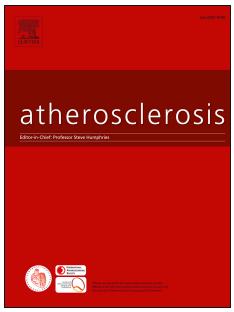

Talking about mediation

André de Oliveira Werneck, Danilo Rodrigues da Silva

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TALKING ABOUT MEDIATION

To the Editor,

Hamer, Yates and Demakakos [1] published a very interesting article in *Atherosclerosis* about the effect of some inflammatory and metabolic risk factors in the association between TV-viewing and mortality among older adults. The authors found that a higher TV-viewing as well as higher fibrinogen were associated with mortality. In addition, the insertion of inflammatory and metabolic risk factors in the regression models changed the relationship between TV-viewing and mortality, indicating a potential mediation role of these biological factors. We recognize the quality of the study from a large prospective cohort (the English Longitudinal Study of Ageing), and we would just like to make a reflection on the statistical definition of "mediation", which the main argumentation was based on.

Mediation is a specific analysis with some theoretical paths that aims to test the effect of a mediator variable (m) in the relationship between an exposure (x) and an outcome (y). The procedures are classically described by Baron and Kenny [2]. To test mediation, three equations are required: a) mediator is regressed onto the independent variable (exposure); b) the dependent variable (outcome) is regressed onto the independent variable and c) the dependent variable is regressed into the independent variable, adjusted for the mediator. To attest mediation, the independent variable has to be significant in predicting mediator in the first equation, the independent variable has to be a significant predictor of the dependent variable in the second equation, and the mediator has to significantly predict the outcome as well as to remove part of totally the effect of exposure in the outcome. Beyond the paths, it is highly recommended to test the indirect effect, which could be made through Sobel test or resampling methods, as Monte Carlo and bootstrapping [3].

Although the conclusion of the referred paper states that "*the association between TV viewing and mortality was partly mediated by inflammatory markers*", the study did not present any test for the indirect effect, which can compromise any inference of mediation due to the lack of clarity and high probability of error. Moreover, it was confusing to understand the mediation effect of each variable in the