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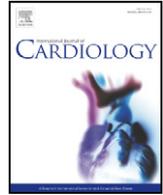
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Letter to the Editor

## On parsimony and tautology in the study of acute coronary syndrome

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In a recent study, Zhang et al. [1] concluded that burnout was associated with poor physical function and low quality of life after acute coronary syndrome (ACS). In our estimation, the authors' study has at least two unnoticed, though major, methodological limitations.

First, the authors did not adjust for depressive symptoms in their statistical analyses. This is problematic because (a) burnout is known to overlap with depression [2,3]—a finding overlooked by the authors—and (b) depression has been associated with ACS [4]. With depressive symptoms unexamined, it is unclear whether burnout accounts for unique variance in physical function and quality of life.

Second, the authors used the “personal burnout” subscale of the Copenhagen Burnout Inventory (CBI) [5] to assess burnout, a questionable methodological choice. Indeed, many CBI items explicitly refer to somatic fatigue and fragility (e.g., “How often do you feel tired?”; “How often are you physically exhausted?”; “How often do you feel weak

and susceptible to illness?”) and are therefore likely to overlap with the dependent variable “physical function.” Thus the authors risk drawing tautologic conclusions—e.g., tired, physically exhausted, and weak and susceptible-to-illness people (as indexed by the measure of burnout) present with poorer physical function.

The aforementioned limitations suggest that Zhang et al.'s [1] conclusions should be considered cautiously. The key issues of confounding factors and overlap between independent and dependent variables need to be more systematically considered in ACS research.

## Conflict of interest

The authors report no relationships that could be construed as a conflict of interest.

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