

# Type D Personality and Heart Disease: Walking the Line Between Enthusiasm and Disbelief

Gesine Grande, Dr. p.h. · Matthias Romppel, MSc ·  
Jürgen Barth, PhD

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After many years of enthusiastic reports on the prognostic potential of the type D construct in patients with coronary heart disease, a critical discussion of methodological shortcomings of type D research was initiated recently. In their letter, de Voogd and colleagues summarize some of the critical issues we mentioned in our meta-analysis, issues that have been well documented elsewhere [2]. We agree with de Voogd and colleagues that small sample sizes, overfitted regression models, and the predominant use of dichotomized type D categories are methodological shortcomings of many primary studies on the effects of type D on prognosis in cardiac patients. That may lead to a higher probability for an overestimation of effects and spurious results, but it does not generate positive results per se.

We also agree that a meta-analysis cannot overcome methodological shortcomings of primary studies. Therefore, we conducted sensitivity analyses and carefully described potential weaknesses and strengths of the included primary studies. Our meta-analytic conclusion that there is a prognostic association of type D with mortality was qualified by

three other important points: (1) studies with lower methodological quality report have larger effects, (2) the effects decline considerably over time (as reported previously for other personality constructs such as the type A behavior pattern and also for biomedical research [1]), and (3) type D personality may not be associated with prognosis in chronic heart failure patients. Despite the overall significant meta-analytic risk estimate, these caveats raise doubt regarding the prognostic value of type D. Moreover, our work underscores the necessity and utility of quantitative reviews to identify problems in a body of literature.

The assertion by de Voogd et al. to banish the concept of type D personality seems premature based upon the available evidence. Aside from additional prospective studies, the most straightforward approach would be to reanalyze primary data from available type D studies with appropriate regression models and in an individual patient data meta-analysis to obtain greater statistical precision [2]. Such research incorporating narrative reviews and quantitative meta-analysis will provide the most defensible conclusion whether type D personality is associated with prognosis in CHD patients or not.

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G. Grande (✉) · M. Romppel  
Faculty of Applied Social Sciences,  
Leipzig University of Applied Sciences,  
POB 301166,  
04251 Leipzig, Germany  
e-mail: grande@fas.htwk-leipzig.de

J. Barth  
Institute of Social and Preventive Medicine (ISPM), Division  
of Social and Behavioral Health Research, University of Bern,  
Bern, Switzerland

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