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DOI:
10.1016/j.jpsychores.2006.02.013

Document Version
Peer reviewed version

Citation for published version (Harvard):
Carroll, D, Macleod, J & Phillips, A 2006, 'Intervening for exhaustion', *Journal of Psychosomatic Research*, vol. 61, pp. 9-10. https://doi.org/10.1016/j.jpsychores.2006.02.013

Post-print, not final published version. Cite this article as: Carroll, D., Macleod, J., & Phillips, A.C. (2006). Intervening for exhaustion. *Journal of Psychosomatic Research,* 61, 9-10. http://dx.doi.org/10.1016/j.jpsychores.2006.02.013 IF 2.54

Intervening for exhaustion

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The search for psychosocial factors that contribute to the aetiology and course of coronary heart disease (CHD) has been an energetic, although not always fruitful, pursuit for more than half a century. Around 20 years ago, Appels [1] identified a prodromal constellation of symptoms, including physical exhaustion and feelings of hopelessness, that preceded major CHD events. It was hypothesized that this syndrome of bvital exhaustion Q (VE) was a causal risk factor for CHD events, and several observational studies demonstrating prospective associations between VE and subsequent events have been adduced as supporting the hypothesis [2–5]. In a recent commentary, however, we discussed the difficulties inherent in drawing causal conclusions from observational evidence [6]. Applying general arguments that are by now very well rehearsed [7,8], we suggested that considerations such as confounding by common antecedents of both VE and CHD and reverse causation could not be readily dismissed and resolution was likely only following experimental studies. For example, an explanation of these prospective associations that regards CHD events as the result of inflammatory processes involved in the progress of atherosclerosis and VE as a consequence of such processes is just as parsimonious as one that regards VE as a causal risk. It is also equally, if not more, plausible biologically; there is now substantial evidence that inflammatory cytokines communicate with the central nervous system contributing to illness behaviour and experience and fostering feelings of depression and fatigue [9]. We also posed the question of what implications do the results of observational studies of VE hold for treatment [6]. Again, we would argue that in the absence of experimental evidence, the implications are extremely limited.

Accordingly, the experimental evidence presented by Appels et al. [10] from the Exhaustion Intervention Trial (EXIT) in the paper published in this issue and its companion article published recently in Psychosomatic Medicine [11] is to be very much welcomed. Over 4000 CHD patients who had undergone successful angioplasty were approached. Refusal to participate and absence of VE reduced the sample to just over 700 who were randomized either to a 6-month exhaustion intervention comprising, among other things, group counseling, stress and anger management, and relaxation, or to a usual care control condition, largely involving routine check-ups. The earlier publication focused on recurrent CHD events. Vital exhaustion measured at 6 months, i.e., immediately after the intervention, did not differ between intervention and control.

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By 18-month follow-up, however, fewer intervention patients reported feeling exhausted; they were also, following statistical adjustment for age, gender, and depression status at intake, less likely to be depressed at 18 months. Nevertheless, the intervention did not reduce the likelihood of patients having a recurrent CHD event, a result which is very much in line with findings from the recent ENRICHD trial that reductions in mortality and recurrent events did not follow from the successful treatment of depression in CHD patients [12]. Appels et al [11] concluded that, these negative outcomes do not refute the strong predictive power of depressive symptomatology or exhaustion observed in many studies, nor do they refute the biological plausibility of this association Q (p. 222). We would submit that they were being unduly modest and that their results and those from ENRICHD should cause us to pause, reconsider the issue of causality, and examine alternative, biologically plausible, explanations for the patterns of results that have emerged from observational studies. Although event-free survival will necessarily remain a key consideration in managing CHD, other outcomes, particularly quality of life, should not be disregarded. In an editorial in an earlier volume of Psychosomatic Medicine, Lesperance and Frasure-Smith [13] argued cogently that, we should not lose sight of the fact that an intervention that improves well-being, but fails to change survival, is still a very valuable treatment Q (p. 20). It is to Appels and his colleagues' [10] credit that, in addition to recurrent CHD events, they measured such well-being outcomes in EXIT; these constitute the focus of their article in this issue. The outcomes reported, aside from depression which is mentioned above, are health-related quality of life, anxiety, anger, and anginal complaints. The intervention, despite including treatment for anger, failed to modify scores on the questionnaire measurement of anger. Effects are reported for the other outcomes, but they are not always easy to interpret. Intervention and control groups showed virtually identical mean health-related quality of life scores at both the 6-month and 18-month sampling points. However, the intervention group registered poorer quality of life at entry to the study and from multiple linear regression, adjusting for age, gender, history of CHD, and comorbidity; in addition to baseline quality of life, the intervention is reported to improve quality of life at 18-month follow-up. Anxiety levels did not improve with treatment, but a treatment by gender by time analysis of variance interaction is reported that did not meet the conventional criterion for statistical significance, with subsequent post hoc analyses indicating that the intervention appeared to be anxiolytic for women. Adjusting for age,

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gender, and comorbidity, but somewhat surprisingly not for whether patients complained of angina at baseline, fewer patients in the intervention group reported anginal complaints at the 18-month follow-up. In contrast to the restraint exercised when discussing the implications of the null findings in their earlier article, the present results are summarised as a consistent picture of treatment-facilitated benefit and improvement in well-being. However, the effects are invariably small, a matter conceded by the authors; they are also somewhat haphazardly manifest, appearing after somewhat varying adjustment strategies and are sometimes present only in subsamples of patients. Indeed, far from suggesting a successful intervention, the present results are less coherent than might be expected from the usual inter-correlations among the outcome variables. Vital exhaustion is strongly correlated with both quality of life and depression; depression is strongly correlated with both quality of life and anxiety. The assessment of angina symptoms is subject to reporting bias linked to negative affectivity [14], which, in turn, is correlated with anxiety. Improving the psychosocial status of CHD patients is an important but often poorly heeded clinical imperative and EXIT is to be lauded for its intent. However, the results are hardly compelling advertisement for this kind of treatment. We base this conclusion not on the failure of the intervention to affect the recurrence of CHD events but on its modest and inconsistent effectiveness in improving psychological well-being.

References

[1] Appels A. Psychological prodromata of myocardial infarction and sudden death. Psychother Psychosom 1980;34:187–95.

[2] Appels A, Mulder P. Fatigue and heart disease The association between dvital exhaustionT and past, present and future coronary heart disease. J Psychosom Res 1989;33:727– 38.

[3] Appels A, Otten F. Exhaustion as precursor of cardiac death. Br J Clin Psychol 1992;31:351–6.

[4] Cole SR, Kawachi I, Sesso HD, Paffenberger RS, Lee IM. Sense of exhaustion and coronary heart disease among college alumni. Am J Cardiol 1999;84:1401– 5.

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[5] Prescott E, Holst C, Gronbaek M, Schnohr P, Jensen J, Barefoot J. Vital exhaustion as a risk factor for ischaemic heart disease and allcause mortality in a community sample A prospective study of 4084 men and 5479 women in the Copenhagen City Heart Study. Int J Epidemiol 2003;32:990–7.

[6] Macleod J, Carroll D. Commentary: what should we make of associations between vital exhaustion and heart disease? Int J Epidemiol 2003;32:997– 9.

[7] Davey Smith G, Phillips AN. Declaring independence: why we should be cautious. J Epidemiol Community Health 1990;44:257–8.

[8] Christenfeld NJS, Sloan RP, Carroll D, Greenland S. Risk factors, confounding, and the illusion of statistical control. Psychosom Med 2004;66:868–75.

[9] Maier SF, Watkins LR. Cytokines for psychologists: implications of bi-directional immune to brain communication for understanding behavior, mood, and cognition. Psychol Rev 1998;105:83– 107.

[10] Appels A, van Elderen T, van der Pol G, Erdman RAM, Assman M, Trijsburg W, van Diest R, van Dixhoorn J, Pedersen SS. Effects of behavioural intervention on quality of life and related variables in angioplasty patients Results of the Exhaustion Intervention Trial (EXIT). J Psychosom Res 2006;61:1– 7.

[11] Appels A, Bar F, van der Pol G, Erdman R, Assman M, Trijsburg W, van Diest R, van Dixhoorn J, Mendes de Leon C. Effects of treating exhaustion in angioplasty patients on new coronary events: results of the randomised Exhaustion Intervention Trial (EXIT). Psychosom Med 2005;67:217–23.

[12] Writing Committee for the ENRICHD Investigators. Effects of treating depression and low social support on clinical events after myocardial infarction: the Enhancing Recovery in Coronary Heart Disease Patients (ENRICHD) randomized trial. JAMA 2002;288:

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701– 9.

[13] Lesperance F, Frasure-Smith N. The seduction of death. Psychosom Med 1999;61:18 – 20.

[14] Macleod J, Davey Smith G, Heslop P, Metcalfe C, Carroll D, Hart C. Psychological stress and cardiovascular disease: empirical demonstration of bias in a prospective observational study of Scottish men. BMJ 2002;324:1247– 51