

# Perceived control moderates the relationship between anxiety and in-hospital complications after ST segment elevation myocardial infarction

Alexander Collins  
Mohamad Zeina

GKT School of Medical Education,  
Faculty of Life Sciences & Medicine,  
King's College London, UK

## Dear editor

We read with great interest the article by AbuRuz,<sup>1</sup> wherein the author investigates first whether anxiety is an independent predictor of in-hospital complications after an acute myocardial infarction (AMI) and second, if perceived control (PC) moderates this relationship. Having carefully studied the interaction between physical and mental health during our time at King's College London medical school, and after conducting a systematic review regarding personality disorders in emergency department presenters and the effects of comorbid personality disorders on clinical outcomes, we feel well placed to comment on the conclusions from this article.

While AbuRuz<sup>1</sup> enhances the body of literature by demonstrating an increased risk of physical complications after an AMI associated with anxiety, we have also seen research to show a link between personality disorder morbidity and other cardiovascular diseases, including increased risk of ischemic heart disease and stroke.<sup>2</sup> The influence of mental health problems on our physical health therefore requires further evaluation to examine the extent of this relationship.

Furthermore, the study setting of Jordan is valid and representative; not only is AMI the leading cause of death in the country,<sup>3</sup> but developing countries (low- and middle-income countries) including Jordan, account for the highest percentage of deaths due to cardiovascular disease globally. Despite the author noting recent studies that consider anxiety after AMI a global health problem,<sup>1</sup> this was the first study to investigate the relationship from a developing country.

During the literature search for the systematic review, a similar bias was found whereby most studies regarding mental health presentations to emergency departments were conducted in developed countries. From our previous research experience in a range of backgrounds, we understand the discrepancies and inequalities regarding research between developed and developing countries. This is crucial to address, given that over 80% of the global population lives in developing countries but just 6% of the research on mental health has been published in indexed journals from such countries.<sup>4</sup> This may be related to a lack of resources, funding, or infrastructure to manage such studies, as well as a stigma related to mental disorders which is likely to contribute to underreporting.

However, this study exhibited good reliability and validity, in particular with the use of empirically demonstrated instruments to measure anxiety and PC. The Cronbach's

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Correspondence: Alexander Collins  
GKT School of Medical Education, King's  
College London, Hodgkin Building,  
Newcomen Street, London SE1 1UL, UK  
Tel +44 776 991 2401  
Email alexander.collins@kcl.ac.uk

$\alpha$  scores for these scales, which provide a measure of the internal consistency of a test, were within the independent range of acceptable values of  $\alpha$  (0.70–0.95).<sup>5</sup>

Furthermore, while PC was determined at an individual level with the revised Control Attitude Scale to moderate anxiety and have a protective effect against post-AMI complications,<sup>1</sup> we concur with the authors reflections that well-developed interventions, including psychotherapy and teaching, could enhance its effect. This would promote more universally applicable and measurable interventions to improve patients PC in an attempt to reduce adverse physical outcomes.

We hope that more studies like these can help us see our patients more holistically, by understanding that there is more to excellent patient care than treating a single disease.

## Disclosure

The authors report no conflicts of interest in this communication.

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