



## EDITORIAL COMMENT

# In-hospital psychological intervention in cardiac rehabilitation following acute coronary syndrome: Brief is better than nothing



## Intervenção psicológica intrahospitalar na reabilitação cardíaca após a síndrome coronária aguda: breve é melhor do que nada!

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Education in health for patients and healthcare providers, including multidisciplinary programs and e-health, is currently a hot topic.

The idea that educational interventions are beneficial for patients with coronary artery disease is supported by a Cochrane systematic review.<sup>1</sup> Nevertheless, further research is needed to determine the best and most cost-effective format for delivery of educational programs.

The article by Fernandes et al. in this issue of the *Journal*<sup>2</sup> examines the specific topic of education and psychological intervention for cardiovascular (CV) patients after acute coronary syndrome (ACS) and their perception of disease and treatment, as well as health habits, to improve adherence to lifestyle changes and risk factor control. This subject, which is important due to the pressing need to decrease CV risk after ACS, has been previously studied in the field of cardiac secondary prevention and rehabilitation.<sup>3</sup>

On the basis of solid evidence, the guidelines recommend comprehensive post-discharge ACS care that covers management of biomedical and lifestyle risk factors, pharmacotherapy, assessment of psychological factors,

and assistance in initiating and maintaining behavioural change.<sup>4–6</sup> Educational interventions for CAD patients should be considered an essential part of cardiac rehabilitation (CR).<sup>3–7</sup>

Health education interventions are comprehensive programs that healthcare providers deliver to patients to help improving clinical outcomes by increasing adherence to and maintenance of healthy behaviours.<sup>8</sup> These programs need to take patients' characteristics into account, and health psychologists are essential for this aspect of the intervention.

As pointed out by Fernandes et al.,<sup>2</sup> current thinking is that education and promotion of knowledge during the hospitalization period about the disease, risk factors and treatment improve the rehabilitation process following ACS. As well as patients' view of their own illness affecting physical and psychological aspects of disease, as the authors show,<sup>2</sup> other important socioeconomic aspects are also involved, like return to work.<sup>9</sup>

The in-hospital post-ACS phase is a unique opportunity to identify risk factors, plan lifestyle changes, and to ensure that the patient is referred to the most suitable center for phase II of the CR program.<sup>7</sup> Hospitalization itself provides access to individuals not registered with a general or specialist doctor, who otherwise would not undergo any intervention.<sup>10</sup> There is evidence that patients may be

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more motivated to engage with lifestyle and behavioural changes while still in hospital.<sup>11</sup> Experiencing a major life event, such as going into hospital, has been identified as a catalyst for initiation of healthy behaviours and thus an ideal opportunity for intervention.<sup>12</sup> The effect of an in-hospital intervention may depend on the individual patient's characteristics, including age, literacy, motivation for change, level of depression and anxiety, and family support. However, such an intervention may be less effective in some patients in the very early stages of hospitalization for ACS, due to the shock resulting from the acute stress of admission. Post-traumatic stress disorder, which occurs in 15-25% of myocardial infarction patients, can cause emotional apathy, lack of interest and memory loss, leading to communication difficulties and amnesia.<sup>13</sup>

The best time to intervene during hospital stay is immediately before discharge. Patients are stabilized and reassured, knowing they will leave the hospital soon. Nurses can play an important role in this process, communicating the essential information provided by doctors. Psychologists can begin a brief intervention on disease perception and tailored behavioural modification, as demonstrated in Fernandes et al.'s paper,<sup>2</sup> which can be continued and extended in outpatient CR.<sup>3-6</sup>

Patients' health knowledge needs to be put into practice in daily life. It is unclear which is the best approach to lifestyle and behaviour change at an individual level. Interventions designed to change behaviour may fail to achieve the desired results,<sup>14,15</sup> and there is little evidence on the impact of health promotion interventions among specific patient groups.<sup>16</sup> Many current interventions target only one risk behaviour, failing to meet the needs of patients with multiple vulnerabilities, such as low levels of health literacy, reduced psychological capability and entrenched cultural and social barriers to health.<sup>10</sup> Individualized counseling is the basis for motivation and commitment. Recommendations include assisting individuals to understand the relationship between their behaviour and their health, and helping them to assess the barriers to behaviour change. Decision-making should be shared between caregiver and patient.<sup>4,17,18</sup>

Previous to the article by Fernandes et al.,<sup>2</sup> an interesting in-hospital psychological intervention study<sup>10</sup> set out to address barriers to lifestyle behaviour change, assess the feasibility and acceptability to patients of delivering an intervention in an acute setting, and analyze preliminary changes to lifestyle behaviours and measures of self-reported health, well-being, and perceived control after four weeks. It highlighted the need to personalize interventions to the individual's needs and circumstances, help people to develop skills to regulate their behaviour, and provide social support for behaviour change plans. The investigators, who used the framework of the 'Behaviour Change Wheel'<sup>19</sup> for the intervention, showed that it was feasible to design and deliver an evidence-informed psychological intervention in a hospital setting.<sup>20</sup> Preliminary health gains were shown by self-reported achievement of goals. Addressing lifestyle risk behaviours such as smoking and poor diet is the single most important way to improve health and reduce premature deaths.<sup>21</sup> The intervention reached deprived groups who had multiple factors impeding

lifestyle behaviour change<sup>22</sup> and enabled the development of resilience and coping skills in these deprived groups that would be transferable to other life situations, including management of long-term conditions.<sup>20</sup>

An important limitation of in-hospital psychological intervention is that although hospitals are in theory a good place to deliver health promotion interventions, these tend not to be prioritized due to competing staff priorities and lack of time and training.<sup>23</sup> For this reason, in-hospital interventions need to be short, direct and concise. There are few examples of similar psychological interventions aimed at addressing multiple lifestyle risk behaviours in hospital patient-based interventions.

Several comments can be made regarding the present study.<sup>2</sup> One concerns the randomization process: although the differences were not significant, the intervention group included younger and more educated patients. Both intervention and control groups were around 30% female, as usually occurs in trials. Instead of weekly randomization, it would have been more appropriate to perform a stratified randomization, including age, gender and educational level as parameters for stratification, to avoid bias.

The model of intervention used was generic and not specific for gender or age. As admitted by the authors, the fact that men and women present different psychosocial profiles regarding response and adaptation to ACS requires different interventions, as reported in the literature,<sup>24</sup> and underlines the importance of gender-specific intervention protocols in CR. Several programs have been proposed that are adapted to age and gender, in order to optimize the results, including adherence. The impact of these two variables and educational level should be further investigated in future studies and taken into account when planning intervention programs.

Certain aspects of the study need to be clarified. Were all patients asymptomatic and stable at the time of intervention within 2-3 days of ACS? How many were in fact anxious or depressed? The guidelines on CV prevention state that treatment of psychosocial risk factors can counteract psychosocial stress, depression and anxiety, thus facilitating behaviour change and improving quality of life and prognosis. Assessment of such risk factors is essential before any psychological or educational intervention. In a previous paper<sup>25</sup> from the same research group as the present paper, anxiety and depression after ACS were significantly reduced and illness cognition improved significantly after a brief psychological intervention, and these changes were maintained or enhanced at one- and two-month follow-up.

Finally, although it is well known that education to improve knowledge of disease, health promotion, risk factor control and lifestyle changes is essential for CV patients, some issues deserve special consideration.

What are the real importance and clinical implications of Fernandes et al.'s study?

(1) The paper calls attention to the need to conduct a larger trial examining in-hospital education, in which patients should be randomized by gender, age and educational level, in order to test different forms of communicating information and effective ways of educating patients to obtain the best outcomes. There is a gap in the evidence, and we still need to determine which

interventions are most effective in specific groups, such as young/old, male/female, high/low socioeconomic status, and high/low educational level. Interactions between caregiver and patient should always follow the principles of patient-centered communication.<sup>17,26,27</sup>

(2) There is evidence that more extensive and/or longer interventions lead to better long-term results in terms of behavioural change and prognosis,<sup>17</sup> so education should continue through phase II (outpatient) CR, which we know is frequently not attended. Results from EUROASPIRE IV<sup>28</sup> and V<sup>29</sup> show that patients hospitalized for CAD only attend CR programs in one half and one third of cases, respectively. An in-hospital intervention enables patients who will not attend a phase II CR program to receive an educational intervention which may increase phase II CR referral and uptake.<sup>5</sup> Lifestyle changes may begin earlier.

(3) Considering the importance of phase I CR and an initial psychological intervention, psychologists and nurses need to be specifically involved in this task, which should be included within the scope of the multidisciplinary CR team. At the least, a brief psychological intervention, which had a beneficial effect in this study, can be administered, and at the same time psychologists should identify depression, anxiety and other psychological problems associated with CAD and refer these patients for psychiatric intervention.

(4) To widen the scope of this psychological and educational intervention, e-health education can be developed, which is likely to reach more patients, particularly younger and better-educated groups. Tele-education could continue the initial brief in-hospital intervention, enhancing its results and prolonging their effects over time.

To conclude, I would say that a brief in-hospital psychological intervention in the context of CR following ACS must be better than no intervention at all.

## Conflicts of interest

The author has no conflicts of interest to declare.

## References

1. Brown JPR, Clark AM, Dalal H, et al. Patient education in the management of coronary heart disease. *Cochrane Database Syst Rev*. 2011, <http://dx.doi.org/10.1002/14651858>. Art. No.: CD008895. CD008895.pub2.
2. Fernandes AC, McIntyre T, Coelho R, et al. Impact of a brief psychological intervention on lifestyle, risk factors and disease knowledge during phase I of cardiac rehabilitation after acute coronary syndrome. *Rev Port Cardiol*. 2019;38:361–8.
3. Piepoli MF, Corrà U, Adamopoulos S, et al. Secondary prevention in the clinical management of patients with cardiovascular diseases. Core components, standards and outcome measures for referral and delivery: a policy statement from the cardiac rehabilitation section of the European Association for Cardiovascular Prevention & Rehabilitation. Endorsed by the Committee for Practice Guidelines of the European Society of Cardiology. *Eur J Prev Cardiol*. 2014;21:664–81.
4. Piepoli MF, Hoes AW, Agewall S, et al. ESC Scientific Document Group; 2016 European Guidelines on cardiovascular disease prevention in clinical practice: The Sixth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of 10 societies and by invited experts). Developed with the special contribution of the European Association for Cardiovascular Prevention & Rehabilitation (EACPR). *Eur Heart J*. 2016;37:2315–81.
5. National Institute for Health and Care Excellence. Secondary prevention in primary and secondary care for patients following a myocardial infarction (clinical guidance 172). NICE; 2013. [www.nice.org.uk/guidance/cg172](http://www.nice.org.uk/guidance/cg172)
6. The BACPR standards and core components for cardiovascular disease prevention and rehabilitation. 3rd ed; 2017. [https://www.bacpr.com/resources/BACPR.Standards\\_and\\_Core.Components.2017.pdf](https://www.bacpr.com/resources/BACPR.Standards_and_Core.Components.2017.pdf)
7. Abreu A, Mendes M, Dores H. Mandatory criteria for cardiac rehabilitation programs: 2018 guidelines from the Portuguese Society of Cardiology. *Rev Port Cardiol*. 2018;37:363–73. Epub 2018 Apr 30.
8. Glanz K, Rimer BK, Viswanath K. Health behaviour and health education: theory, research and practice. Hoboken, NJ: John Wiley & Sons; 2008.
9. Petrie KJ, Weinman J, Sharpe N, et al. Role of patients' view of their illness in predicting return to work and functioning after myocardial infarction: longitudinal study. *Br Med J*. 1996;312:1191–4.
10. Gate L, Warren-Gash C, Clarke A, et al. Promoting lifestyle behaviour change and well-being in hospital patients: a pilot study of an evidence-based psychological intervention. *J Public Health*. 2016;38:e292–300.
11. Lawson PJ, Flocke SA. Teachable moments for health behavior change: a concept analysis. *Patient Educ Couns*. 2009;76:25–30.
12. Allender S, Hutchinson L, Foster C. Life-change events and participation in physical activity: a systematic review. *Health Promot Int*. 2008;23:160–72.
13. Gander M-L, von Känel R. Myocardial infarction and post-traumatic stress disorder: frequency, outcome, and atherosclerotic mechanisms. *Eur J Card Prev Rehab*. 2006;13:165–72.
14. National Institute for Health and Care Excellence. Behaviour change: the principles for effective interventions. Report No. 6; 2007.
15. Griffin SJ, Simmons RK, Prevost AT, et al. Multiple behaviour change intervention and outcomes in recently diagnosed type 2 diabetes: the ADDITION-Plus randomised controlled trial. *Diabetologia*. 2014;57:1308–9.
16. Michie S, Jochelson K, Markham WA, et al. Low-income groups and behaviour change interventions: a review of intervention content, effectiveness and theoretical frameworks. *J Epidemiol Community Health*. 2009;63:610–22.
17. Artinian NT, Fletcher GF, Mozaffarian D, et al. Interventions to promote physical activity and dietary lifestyle changes for cardiovascular risk factor reduction in adults: a scientific statement from the American Heart Association. *Circulation*. 2010;122:406–41.
18. General Medical Council. Consent: patients and doctors making decisions together. Manchester, UK: General Medical Council; 2008.
19. Michie S, Van Stralen MM, West R. The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implement Sci*. 2011;6:42.
20. Petrie K, Weinmann J. Perceptions of health and illness. Amsterdam: Harwood Academic; 1997.
21. Halpin HA, Morales-Suarez-Varela MM, Martin-Moreno JM. Chronic disease prevention and the new public health. *Public Health Rev*. 2010;32:120–54.
22. Marmot M. Fair society, healthy lives. London, UK: The Marmot Review; 2010.
23. Lee DJ, Knuckey S, Cook GA. Changes in health promotion practice in hospitals across England: the National Health Pro-

- motion in Hospital Audit 2009 and 2011. *J Public Health*. 2014;36:651–7.
24. Supervía M, Medina-Inojosa JR, Yeung C, et al. Cardiac rehabilitation for women: a systematic review of barriers and solutions. *Mayo Clin Proc*. 2017, <http://dx.doi.org/10.1016/j.mayocp.2017.01.002>. pii:S0025-6196(17)30026-5 [Epub ahead of print].
  25. Fernandes AC, McIntyre T2, Coelho R, et al. Brief psychological intervention in phase I of cardiac rehabilitation after acute coronary syndrome. *Rev Port Cardiol*. 2017;36:641–9. Epub 2017 Sep 4.
  26. Hazelton G, Williams JW, Wakefield J, et al. Psychosocial benefits of cardiac rehabilitation among women compared with men. *Cardiopulm Rehab Prev*. 2014;34:21–8.
  27. Burell G, Granlund B. Women's hearts need special treatment. *Int J Bbehav Med*. 2002;9:228–42.
  28. Kotseva K, Wood D, De Backer G. EUROASPIRE Investigators. Determinants of participation and risk factor control according to attendance in cardiac rehabilitation programmes in coronary patients in Europe: EUROASPIRE IV survey. *Eur J Prev Cardiol*. 2018;25:1242–51.
  29. Kotseva K, on behalf of the Euroaspire Investigators. EUROASPIRE – time trends in lifestyle, cardiovascular risk factors, and therapeutic management in European patients with coronary artery disease. In: Presented at ESC congress. 2018. [www.crtonline.org/Assets/f3f2f664-0ae4-43cd-8465-677a71fc679a/./euroaspire-pdf](http://www.crtonline.org/Assets/f3f2f664-0ae4-43cd-8465-677a71fc679a/./euroaspire-pdf). <http://www.crtonline.org/Assets/f3f2f664-0ae4-43cd-8465-677a71fc679a/636709976569170000/euroaspire-pdf>