

## The Necessity of Participation of Patients with Chronic Heart Failure in Cardiac Rehabilitation

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### Editorial

Cardiac rehabilitation (CR) is a well-documented and evidence-based course of long-term management for patients with chronic heart failure (CHF). The core components of comprehensive CR programs for CHF patients are exercise, education, counseling and psychosocial support, services which are delivered by a multidisciplinary team and are accompanied by excellent outcomes for both the patient and the healthcare system in general [1].

Although, the utilization rates of comprehensive CR services from eligible CHF patients is extremely low worldwide [2], the necessity of participation of these patients in CR is undeniable and is determined by the epidemiological characteristics of CHF, the strong evidence derived from the guidelines and recommendations developed by scientific associations, the documented benefit for both the patient and the healthcare system and the poor self-care behavior of these patients, which is modifiable through the use of rehabilitation services. CHF is among the leading causes of morbidity and mortality, with increasing prevalence and incidence rates in the general population [3]. It is estimated that 6.5, 5.1 and 2.5 million have CHF in Europe, the USA and Japan, respectively, while the annual incidence approaches 10 new cases per 1,000 population after 65 years of age [4,5]. In addition, many scientific associations have published clinical practice guidelines, strongly recommending CR for CHF patients as an evidence-based, effective and safe long-term therapeutic approach. According to the Scottish Intercollegiate Guidelines Network (SIGN) patients with CHF should be considered for comprehensive CR if they have limiting symptoms (Grade of recommendation A) [6]. While recent guidelines by the European Society of Cardiology state that regular aerobic exercise is encouraged in patients with CHF to improve functional capacity and symptoms (Class of recommendation I, Level of evidence A) [7].

Another important parameter, which emphatically demonstrates the necessity of CHF patients' participation in CR, is the significant benefit for both the patient and the healthcare systems. Exercise training, the core component of comprehensive CR, has been associated with improved patient peak oxygen consumption during exercise (VO<sub>2</sub> max) and exercise tolerance, improved skeletal muscle metabolism, blood flow, vasodilatory capacity and endothelial function and decreased oxidative stress. On the other hand, evidence suggests that comprehensive CR in CHF patients improves New York Heart Association (NYHA) functional class, reduces all cause and cardiovascular mortality by 35%, reduces hospital admissions, improves quality of life and self-care behavior, reduces anxiety, depression symptoms and is a well-documented cost-effective healthcare service [1].

As aforementioned, the comprehensive CR has been associated with improved self-care behavior of CHF patients. The literature review reveals that CHF patients have many difficulties to maintain satisfactory self care behavior and are characterized by poor medication, dietary and fluid adherence, inability for symptom monitoring, problematic alcohol intake, high incidence of cachexia and limited physical activity. In addition, a surprising number of people with CHF continue to smoke, to omit the suggested vaccinations against influenza and pneumococcal infection, to have poor dental health and to use medications that had not been prescribed by their physician [8]. Consequently, CHF patient participation in CR could promote their self care behavior, through education, counseling and specific psychosocial interventions.

All the above indicate the importance and necessity of participation of CHF patients in comprehensive CR programs, which could guarantee the effective long term management of their disease. Despite the benefit, in the United Kingdom between April 2011 and March 2012, only 2% of patients who participated in CR were referred because of CHF [9] and a recent European study showed that < 20% of patients with CHF are involved in CR [10]. We believe that the main reason for this hypo-utilization of CR is the inadequate referral of CHF patients by the multidisciplinary team. As nurses spend more time with patients, CR nurses could contribute to higher participation rates granted that recent literature underlines that patients who received recommendation from nurses demonstrated significantly higher CR attendance [11].

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