Revista da
SOCESP
Sociedade de Cardiologia do Estado de São Paulo

IMPORTANCE OF EDUCATION FOR CARDIOVASCULAR DISEASE PREVENTION

IMPORTÂNCIA DA EDUCAÇÃO PARA PREVENÇÃO CARDIOVASCULAR

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Received on 02/20/2019,
Accepted on 03/08/2019

ABSTRACT

Cardiovascular disease is one of the leading causes of morbidity and mortality worldwide and represents a high cost for health systems. Therefore, measures to prevent these conditions and to control their risk factors are essential. One alternative consists of educational interventions for the population as a means of enabling the individual to make the necessary changes in their lifestyle, as well as professional education measures to disseminate the management of cardiovascular emergencies with considerable impact on the survival of individuals with these problems. In this text, we strive to describe the most common and effective educational measures for this prevention.

Keywords: Education; Sedentary Lifestyle; Disease Prevention; Cardiovascular Disease; Risk Factors.

RESUMO

As doenças cardiovasculares estão entre as maiores causas de morbidade e mortalidade em todo o mundo e são responsáveis por um elevado custo para os sistemas de saúde. Assim, as medidas de prevenção dessas doenças e o controle de seus fatores de risco tornam-se essenciais. Para isso, temos como alternativa, intervenções educacionais para a população, como maneira de fortalecer o indivíduo para realizar as mudanças necessárias em seu estilo de vida, e medidas de educação profissional, para difundir o manejo de emergências cardiovasculares, com grande impacto na sobrevida de indivíduos com esses problemas. Neste texto, procuramos descrever as medidas educacionais mais frequentes e efetivas para essa prevenção.

Descritores: *Educação; Estilo de Vida Sedentário; Prevenção de Doenças; Doenças Cardiovasculares; Fatores de Riscos.*

INTRODUCTION

Cardiovascular diseases are the leading cause of death globally, being responsible for approximately 15.2 million deaths worldwide and 362,091 deaths in Brazil annually (2016 data).[1,2] In addition to morbidity and mortality, they are costly to the health system, with a significant increase in expenditure recently.[3] Considering the significant impact in terms of health and public expenditure, preventive measures focusing on controlling risk factors such as obesity, sedentary lifestyle, and smoking should be performed in addition to early and correct treatment. The implementation of these measures would be possible through education, disseminating knowledge of chronic diseases and their risks to the population, and collaboration for health promotion.[4,5] Thus, the strategy to reduce the risks and outcomes of cardiovascular diseases is promoting education, both of the population and professionals, collaborating to health promotion and optimization of public expenditure.

EDUCATIONAL STRATEGIES FOR THE PUBLIC

Education level has a direct influence on cardiovascular diseases. Studies conducted in developed countries found that education level is associated with cardiovascular risk,[6,7] which was also observed in an observational study conducted in the Brazilian population.[8] In 2017, the Brazilian National Household Sample Survey showed that the population aged > 25 years had approximately 9.1 years of education, largely varying depending on the region, with less years of education in the North and Northeast regions.[9] The improvement in the quantity, quality, and distribution of education could reduce the prevalence of cardiovascular diseases.

In addition to education level, specific educational interventions in the population can contribute as both primary and secondary prevention measures. A study conducted in Italy by Aquilani et al. on 280 students promoted discussions by trained teachers in the school environment on cardiovascular risk factors, diet, and healthy habits. They observed an improvement in the lipid profile of these adolescents,[10] which supports the hypothesis that the discussion on lifestyle and diet should be initiated in schools.

Educational interventions in primary care settings focused on lifestyle changes are effective in reducing cardiovascular risk and controlling risk factors.[11,12] Moreover, we can take advantage of the proximity with other levels of the health system in performing interventions. A study conducted by Chaves et al. with patients

 http://dx.doi.org/10.29381/0103-8559/2019290143-5

and their companions participating in a hospital educational program on healthy diet, physical activity, and smoking and stress cessation assessed symptoms of dyspnea and angina in addition to lipid profile and smoking. They also observed a decrease in risk factors and improvement in symptoms, regardless of the low adherence of participants to the intervention.[13] An alternative is teaching the relatives of hospitalized patients cardiopulmonary resuscitation maneuvers, as conducted in the study by Blewer et al. who recruited 1464 relatives of patients admitted in cardiology wards in eight hospitals, training them with educational videos and training kits.[14] These studies show the importance of conducting projects in not only primary care but all levels of the health system.

One difficulty of these measures is how to address the portion of the population that has no contact with the health system. Normally, this portion consists of the population of productive age. An alternative is to perform interventions in workplaces, which is effective in teaching about cardiovascular diseases and controlling risk factors.[15] A study conducted by Ganassin et al. on 135 workers in the metallurgical sector in southern Brazil demonstrated that discussions on cardiovascular diseases increase their knowledge[16] and may be a useful tool to disseminate knowledge. A meta-analysis conducted in 2012 by Van de Vijver[17] analyzed the different types of educational interventions performed in low- and middle-income countries, demonstrating that the combination of the abovementioned measures, associated with training of physicians in hypertension management, has a great impact on the prevention of cardiovascular events.

In addition to the control of risk factors, teaching the public on how to recognize and initially manage a cardiovascular emergency reduces mortality from these diseases. It is essential that the public knows how to perform basic life support (BLS) in cardiorespiratory arrest because this maneuver can increase survival and decrease sequelae in patients.[18] A study conducted in Campinas, São Paulo, showed that the public is unaware of BLS maneuvers and, for this reason, does not perform it.[19] This finding reinforces the importance of educating the population.

HeartSave AED, a BLS course developed by the American Heart Association (AHA), lasting 4 h with emphasis on cardiac resuscitation in adults and the use of automated external defibrillators, aims at disseminating this knowledge to the public. In addition to this course, studies conducted in Maceió, Alagoas,[20] and Ribeirão Preto, São Paulo,[21] on students from public and private schools found that teaching BLS to primary and secondary school students was an effective method for disseminating BLS. González-Salvado offered a practical training of BLS to 114 patients admitted to a hospital for cardiac rehabilitation and found that it is an effective method of teaching, improving knowledge retention and confidence in performing the maneuvers.[22] BLS should be disseminated even in modalities that, besides being unconventional, are easier to manage such as interactive online courses.[23] The distance learning modality would increase the scope of this training, but the non-use of manikins for training chest compressions and airway management, as used in the BLS courses and the abovementioned studies, would impair the acquisition of skills in these competencies.

EDUCATIONAL STRATEGIES FOR HEALTH PROFESSIONALS

Immersion course is a teaching method widely applied among health professionals. Among several courses, those addressing cardiologic emergencies stand out because of the importance of this subject and their tradition. The BLS course developed by AHA addresses the subject of BLS and the first steps for ensuring survival. It is essential that all healthcare professionals, including physicians, at all levels of health, have knowledge on BLS. This course consists of theoretical material, practical stations, and demonstration videos conducted by a qualified instructor, providing theoretical and practical training. In addition to the BLS course, AHA offers the Advanced Cardiovascular Life Support (ACLS) course for health professionals who participate in cardiology emergency care. The importance of ACLS is that presently it is also indicated for physiotherapists, in addition to physicians and nurses. The ACLS and BLS courses consist of theoretical-practical training that addresses respiratory and cardiorespiratory arrest, arrhythmias, acute coronary syndrome, and stroke through theoretical material, simulations, and videos.

BLS and ACLS courses are conducted worldwide by AHA-certified individuals. Due to the success and efficacy of these courses in the management of cardiac emergencies, the Advanced Life Support in Heart Failure course was designed. This course approaches the global and specific aspects of acute heart failure and its management until hospital discharge, using simulations and discussions of cases, with the aim of systematizing and standardizing the conducts. As we have seen, all these courses use a theoretical and practical teaching methodology that provides better learning than a strictly theoretical course.[24] These courses use simulated scenarios in addition to training skills in manikins (e.g., chest compression, airway management) to allow practical teaching. The simulations use high-fidelity manikins, which reproduce the physical examination and electrocardiographic tracings of patients, simulating patient care, without exposing health professionals to risks. Besides providing greater knowledge retention,[25-27] this is a method well accepted by students.

Such professional development courses have great importance for the reduction of cardiovascular mortality. Moreover, we mentioned above some successful strategies to reduce cardiovascular risk in the public. Skilled and trained professionals are needed for the development and implementation of these strategies. It is the role of the cardiologist to evaluate and address individual and population cardiovascular risk factors and participate in and develop prevention programs.[28] In addition to pathophysiological and clinical knowledge, epidemiological knowledge of the target population is required.[29] Cardiovascular prevention has been widely discussed, being the target of an AHA recommendation for the adaptation of the medical curriculum so that the competence to address lifestyle change may be developed by all physicians.[30]

CONCLUSION

Here, we present some educational strategies described in the literature aimed at the public. It is the role of the cardiologist, family physician, general practitioner, and other professionals to determine the cardiovascular risk factors

and their epidemiology so that they can develop and apply an effective intervention.

In all abovementioned studies, education was used to empower individuals to change their lifestyle and thus reduce their cardiovascular risks. By applying these measures, we give autonomy to patients so that they start to actively participate in healthcare, becoming authors of their outcome. Therefore, we must emphasize the need for qualified professionals to perform the desired interventions, which reinforces the importance of medical education for this competence. Professionals should play an active role in the application of these measures and undergo continuous training in cardiovascular emergencies.

CONFLICTS OF INTEREST

The author declares that he has no conflicts of interest in this work.

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