

The Influence Of Economic Crisis On Cardiovascular Health

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Abstract

Introduction: The economic crisis has obviously negative effects on society. In the context of economical crisis, there is an increase in morbidity and mortality rates derived from cardiovascular diseases and more particularly from acute heart attacks. The inability of patients' compliance to treatment due to the cost and the negative effects of stress, as a consequence of the economic crisis, on cardiovascular health, is also apparent.

Objective: The objective of this review is to investigate the effect of economic crisis on the cardiovascular system and the development of cardiovascular diseases. Exclusion criterion for the articles was other language used except from Greek and English.

Methodology: Extensive review of the relevant literature was performed via electronic databases (Medline, Pubmed, Cinhal, Scopus, Google Scholar) and scientific journals using the appropriate key words.

Results: In all countries in economic crisis the health of the lower socioeconomic strata suffers more due to limited access to health services and this fact combined with higher rates of anxiety and depression and increased rates of smoking leads to increased cardiovascular mortality. The sleep disorders are also present mainly due to the uncertainty and anxiety about the future. Furthermore, an increase of alcohol consumption in combination with all the above events have devastating effects in the cardiovascular system.

Conclusions: From the experience we have so far in the countries affected by the economic crisis, it seems that there is a direct connection between the crisis and the rise of the cardiovascular diseases. It is necessary, therefore, to find alternative ways to deal with anxiety and depression, to make efforts to improve living and to try to overcome habits that damage the cardiovascular system and as a result they lead to a deterioration of the existing situation with painful consequences on the health of individuals.

Key words: economic crisis, financial crisis, social determinants, Cardiovascular system, Cardiovascular Disease (CVD), Congestive Heart Failure (CHF), Coronary Heart Disease (CHD)

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Introduction

For more than ten years, the economic crisis hit the European economy and led to transformations in everyday life of millions of individuals and families in Europe as well as in other regions of the world. Nowadays with the economy slowing down constantly and unemployment rising rapidly, especially in countries, where the economic situation is really hard, several health carers raise concerns about potential negative effects of this difficult situation on human's health. It is reported that severe financial downturns are responsible for the increase of health risks that eventually affect morbidity and mortality rates. (Khang et al, 2005; WHO, 2009) Consequently, there is a big probability the economic crisis to become a health crisis (including both physical and mental health problems) with subsequent social implications. (WHO, 2009; Gilli et al, 2013)

According to WHO (2009) the personal effects of the economic crisis include loss of savings and homes and increases in marital breakdowns, while direct health effects include increases in rates of diabetes and hypertensive disease, short-term adult male mortality and population heart disease mortality. Over 82% of the mortality burden is caused by ischaemic or coronary heart disease (IHD), stroke (both hemorrhagic and ischaemic), hypertensive heart disease or congestive heart failure (CHF). All these diseases derived from the cardiovascular system are closely associated with multiple psychosocial factors, such as stress, anxiety, fear and depression. Chronic states of anxiety and prolonged depression are consistently linked to risk of coronary heart disease (CHD) events, including both fatal and non-fatal myocardial Infarction (MI). The inability of patients' compliance to treatment due to cost, the negative effects of stress, as a consequence of the economic crisis, emotional states associated with job loss, may influence cardiovascular health through excessive activation of stress response pathways including the sympathetic nervous system and hypothalamic-pituitary-adrenal axis. (Kubzansky & Kawachi, 2000). Furthermore, graded increases in heart attacks and arrhythmias, more specifically in Atrial Fibrillation (AF) are closely related to lower quality of life due to the financial crisis. The progressive adoption of unhealthy diet, sedentary lifestyles, tobacco and alcohol consumption lead to the upsurge of cardiovascular problems. (European Society of Cardiology, 2014)

Association between lack of Health Insurance and Cardiovascular Disease (CVD)

The economic capacity of an individual to spend resources and time on health care (eg, direct, indirect, and opportunity costs), which is referred as affordability, is a major factor that affects the health status of individuals. (Wilper et al, 2009) Lacking health insurance has a profound effect on mortality rates, as there is no access to the health care services. Access has been defined as the opportunity to identify healthcare needs, to ask for healthcare services, to reach, to obtain or use health care services and to actually have the need for services fulfilled. During an economic crisis there are many people who lack of insurance and consequently, they have difficulties in accessing care. (Levesque et al, 2013) In Greece, for example, the benefits for unemployed people are reduced after twelve months of unemployment. As such, the unemployed for a large period of time (more than twelve months) do not have access in the healthcare services and they cannot cover their health care needs, fact that leads them to despair. (van Gool & Pearson, 2014).

As it concerns CVD, lack of insurance is associated with a lower possibility of adequate treatment of risk factors of CVD (such as uncontrolled high blood pressure, uncontrolled high levels of low-density lipoproteins cholesterol (LDL-C), current cigarette smoking, physical inactivity) and with an increased risk of stroke and cardiovascular death. (Daviglius et al, 2012)

Social determinants of cardiovascular health

‘Social determinants of health’ are generally described as the health impact of the social environment on people living in a particular community and they are mostly responsible for health inequities between and within countries. (Wilkinson & Marmot, 2003; WHO, 2010) According to WHO (2012) the social determinants of health are the conditions in which people are born, grow, live, work and age. These conditions are in turn influenced by the distribution of money, power and resources at local, national and global levels. Socioeconomic changes are essential determinants of a community's population health in both short and long term. (Kreatsoulas, C & Anand, 2010)

Socioeconomic position, known as SEP, is closely related to cardiovascular health. More specifically, education, income, and occupation are the three main dimensions indicating the CDV risk. It is documented in the literature that in the United States as lower is SEP as greater the prevalence of CVD risk factors and a higher incidence of morbidity and mortality resulting from CVD, exists. (AHA, 2015). In a recent study of Parekh et al (2020), it was shown that food insecurity and housing insecurity increased the odds of CVD by more than 50%, while healthcare access hardship increased odds of CVD by 47%. Furthermore, financial insecurity showed 2 times higher odds of CVD compared to non-CVD. It is also well documented in the literature that childhood adversities, which are common in the US as well as in other countries of the world, lead to a great prevalence of CVD risks, such as obesity, diabetes,



and hypertension among children of lower socioeconomic status (Odgen et al, 2014). Merrick et al analyzed data from 214 157 adult respondents in the 2011-2014 Behavioral Risk Factor Surveillance System from 23 states, concluded that early life adversity was highest among those with less than a high school education and those with a low household income. Despite these reports of disparities in early life adversity exposure, there is not enough evidence regarding the variation in the association between early life adversity and CVD risk across vulnerable populations. Several potential mechanisms linking early life adversity with CVD Risk, including behavioral and psychological factors, systemic inflammation, epigenetics, hormonal factors and dysregulation of physiological systems, could explain the way by which early life adversity increases the risk for CVD (Suglia et al, 2020).

Economic crisis and alcohol consumption

Economic crisis is a difficult and complex situation, in which several behavioral patterns, such as alcohol consumption and smoking, are affected. In the systematic review of Goeij et al (2015) about the way an economic crisis affects alcohol consumption and the arising alcohol-related health problems, two behavioral mechanisms seem to influence the above mentioned factors. According to the first mechanism unemployment and income reductions cause psychological distress to individuals, which in turn can increase drinking problem. On the other hand, according to the second mechanism, due to tighter budget constraints, less money is spent on alcoholic beverages. It is mentioned that, across many countries, the first mechanism is mainly observed in men.

It is also well documented in the literature that the contribution of alcohol consumption to population incidence and prevalence of CVD vary according to level of intake. There is a J- or U-shaped association between alcohol consumption and myocardial infarction (MI), hypertension, and type 2 diabetes mellitus, which are essential predictive conditions of HF. (Kloner & Rezkalla, 2007; Djooussé & Gaziano, 2008; Whelton et al, 2018). Further, heavy alcohol consumption is closely related to alcoholic cardiomyopathy, which is closely characterized by left ventricular dilation, increased left ventricular mass, and reduced or normal left ventricular wall thickness among patients who have been consuming alcohol for many years. It is not clear in the literature the amount and duration of consumption required to produce symptomatic alcoholic cardiomyopathy, but in most studies it is documented that alcoholic patients with symptomatic HF have been heavily drinking for more than 10 years (Piano, 2002; Djooussé & Gaziano, 2008)

Economic Crisis and Smoking Behavior

It is well supported in the literature that economic crisis also affects smoking behavior. However, a mixed picture is shown as it happens with alcohol consumption. On one hand, in periods of financial strain, smoking habit can be increased as individuals try to ameliorate the effects of feeling anxiety by enacting behaviors that provide temporary relief (Benson et al, 2015). According to Shagiwal et al (2018) there is

an inequality associated with the existing socioeconomic status (SES). Low-SES individuals are financially strained and as such they are more likely to smoke more, to experience higher rates of smoking-related morbidity, to be in poorer health and have reduced life expectancy.

On the other hand, there are studies in which it is supported that tobacco use is decreased during times of economic crisis. In the study of Filippidis et al (2014) a significant decline in smoking prevalence among the general population is documented, but it is important to highlight that this fact may not be solely due to financial austerity measures, but it is likely that tobacco control measures may have interacted with the decline in disposable income. Moreover, smoking was considered as the most essential predictive factor for Cardiac Artery Disease (CAD) before financial crisis, but not during the crisis.

Economic crisis - Anxiety and Depression

It is already known that Cardiovascular Disease (CVD) and mental disorders often coexist. Mood and anxiety disorders are common in patients in general, while this prevalence rises up to 40% in patients suffering from cardiovascular disease. Depression causes an increased incidence of cardiovascular disease (CVD), and also increases the risk of incidents that lead to cardiac-related, and all-cause death in patients with a history of CVD. (Małyszczak K, Rymaszewska J, 2016) The presence and severity of clinical depression in patients is associated with higher risk of cardiac arrest resulting in death (Empana, 2006)

Economic stress and uncertainty due to Global Financial Crisis is associated with increased individual's vulnerability to both physical and mental health. (Sargent-Cox et al, 2014). Patients' socio-economic aspects, personality characteristics, health behavior and even biological pathways may contribute to the course of cardiovascular disease. (Chauvet-Gelinier & Bonin, 2017). In the study of Mattei et al (2014) about the short-term effects of the 2008 Great Recession on the health of the Italian population, it is reported that the rise of unemployment in Italy lead to an increased incidence of the mortality due to cardiovascular causes. This fact is possibly due to work-related stress activating the pituitary-adrenal system with release of catecholamines that have a well-known role in cardiovascular events (Australian Bureau of Statistics (2006–2010) Labour force; Mucci et al, 2016)

Sleep Disorders and Cardiovascular Health

Sleep plays an important role in maintaining of cardiovascular health. Insufficient sleep duration is dominant in the population, especially in periods of economic crisis, and is associated with weight gain and obesity, inflammation, cardiovascular disease, diabetes, and mortality. (Grandner et al, 2016). According to Grandner et al (2011), there is an interaction between sleep duration and sleep disturbance. Short sleep duration in combination with subjective sleep disturbance is



associated with increased risk of coronary heart disease. Furthermore, sleep disturbances, like poor sleep, insomnia and excessive daytime sleepiness, might be signs of poor self-rated health and minor psychiatric morbidity (Stores, 2007; Steiropoulos et al, 2014)

Conclusions

From the experience we have so far in the countries affected by the economic crisis, it seems that there is a direct connection between the crisis and the rise of the cardiovascular diseases. It is necessary, therefore, to find alternative ways to deal with anxiety and depression, to make efforts to improve living and to try to overcome habits that damage the cardiovascular system and as a result they lead to a deterioration of the existing situation with painful consequences on the health of individuals.

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