

Development of premature coronary health and social care essay



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Physical inactivity is fourth in line when considering the risk factors for global mortality. In the United States alone the prevalence of CVD is nearing 40% in people approaching 60 years of age while it exceeds 70% in older ages [1].

According to WHO, in Europe CVD causes more than half of all deaths across the region. In retrospect CVD causes 46 times the number of deaths and 11 times the disease burden caused by AIDS, tuberculosis and malaria

combined in Europe [2]. One important and alarming fact is however the preventability rate of premature heart disease and stroke which is almost 80% [3]. One of the three main key health behaviors in achieving

cardiovascular health is being physically active. It is accepted known fact that obesity is directly related to increased calorie intake, at least for most people, reduced or less than sufficient physical activity (PA), or both.

Consequently signs of obesity and insufficient PA imposes a decline in cardiorespiratory (or aerobic) fitness (CRF) levels. In combination, this evidence unequivocally suggests that an individual's life style and health behaviors present a high relevance to the prevention of CVD, which is of extreme importance worldwide from both a medical and financial

perspective Physical activity (PA) and physical fitness (PF), are extremely important (as well as muscular fitness and especially CRF), for minimizing chronic disease effects, and there is an ever increasing attention to the fact, in an effort to promote overall cardiovascular and general health, to improve the citizen's quality of life, ultimately delay CVD and mortality [4], [5].

Clearly, PF and CRF in particular constitute solid groundwork for academic achievement, increase job productivity, and overall maintenance of general health, among other things [6], [7] The reference set most commonly used in

CRF classification derives from the Cooper Institute (Dallas, TX), starting in <https://assignbuster.com/development-of-premature-coronary-health-and-social-care-essay/>

1971 and running until 2006. This particular classification included 40, 718 men and 15, 000 women. [16] As derived from this dataset, CRF emerges as one of the strongest risk factors related to CVD and all-round mortality, and high levels of CRF largely negate the adverse effects of traditional coronary heart disease (CHD) risk factors, even in patients that present multiple CHD risk factors (are overweight and/or obese, suffer from metabolic syndrome and/or type 2 diabetes mellitus, and hypertension).[17–23] Over the past 20 years, an increasing amount of data is being published indicating the importance of CRF in reducing the risk for adverse health related outcomes. [4, 26, 27] In several studies, CRF revealed itself as a stronger predictor of adverse outcomes than the most established risk factors such as type 2 diabetes mellitus, hypertension, smoking and obesity . In addition, CRF was proven to be a better predictor of risk than Figure Overview of the prevalence of co-morbidities associated with CVD in elderly patients other exercise test variables, including ST-segment depression, symptoms, and hemodynamic responses,[9, 28–32] a fact not necessarily appreciated by the medical professionals.[33, 34] Moreover, it was evident that CRF at the time of the studies was not lower due to other disease. Additionally a few recent studies have communicated CRF as a measure of survival benefit per metabolic equivalent of task (MET); each 1-MET increase (a comparatively small increase achievable by most individuals) is linked with large (10%–25%) survival rate improvement. Despite these observations, the importance of CRF in the risk paradigm has historically received lower than deserved attention amongst cardiologists since the medical approach has been more focused on studying the ST segment of the ECG, therefore evaluating the need for revascularisation. [34, 35] Over the past decade, there have been a <https://assignbuster.com/development-of-premature-coronary-health-and-social-care-essay/>

few clinical populations facing this issue usually with patients in exercise testing clinical scenarios.[4, 9, 30, 32] In a study in the US involving war veterans, 6213 men followed a maximal training regime for clinical evaluation and its respective follow up (mean follow up time of 6. 2 years). [9] The classification took place dividing the subjects into 5 categories related to CFR gradients. When comparing normal subjects with those with CVD the ones least fit had more than 4 times the risk of all round mortality than those with the top CRF level. As it turned out CRF was much stronger as an indicator in the prediction of mortality than traditional factors e. g. type 2 diabetes mellitus, hypertension, high cholesterol and smoking. More recently another cohort study of veterans stratified by race also confirmed the above result among more than 15000 subjects [32]. There have been other clinical studies namely those from Cleveland Clinic [30], Mayo Clinic [28, 29] and the Toronto Rehabilitation Institute [38, 39] have proven the significance of CRF as a mortality predictor, with life benefits between 15 and 35% for each MET. Kodama et al [4] has further proven the strong association between CRF, CVD and all-round mortality. This was possible through a meta-analysis of 33 studies covering nearly 103, 000 subjects. It was shown that subjects with low fitness showed almost 70% higher risk of all-round mortality and 56% CVD-related mortality when compared to those with high CRF. In fact the whole meta-analysis process suggested a 13-15% reduction in CVD and all-round mortality per MET achieved. In all these studies one consistent finding was revealed: the most significant differences in health benefits existed between fitness groups occupying the last and the second to last places. This means that health outcomes were not so evident for individuals belonging in moderate and high-fit groups. In other words,

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CRF has more benefit for those at the lower end of the CRF scale. In general the above mentioned studies usually categorize the group of participants in quintiles but this gradient was evident in studied were subject were distributed in a wide range of categories. In turn this finding has proven to be very prominent when designing national and international guidelines on health and PA, which is the fact that small improvements in CRF can dramatically improve the health outcomes of low-fit individuals. Since PA has a large enough role in the enhancement of CRF and small amounts of PA significantly improve CRF, given the fact that most individuals are not fit, this translates to higher impact on public health. A strong impact on morbidity and mortality stems from the widely acceptable recommendation that all adults should perform from 75 (vigorous) to 150 minutes (moderate) of PA each week [40, 41]. This little PA can moderately improve CRF. Additionally, CRF is an important market for other functioning limitations and/or frailty. Quality of life is very tightly associated with both the above and CRF is a major factor that can seriously affect longevity, reduce disability and dependency, resulting also in lower healthcare costs. The definition of functional limitations is related to the ability of performing normal daily tasks [42]. Functional decline is evident in the ability to walk properly, climb stairs, and perform everyday household tasks [43, 44]. Frailty on the other hand is evident when the functional reserve is low and demonstrates itself on multiple organ systems. It is often demonstrated with fatigue, reduced muscle strength and high disease susceptibility [45]. Physical activity or relative fitness lowers the risk of functional loss in follow-up periods from 5 to 30 years [46-48]. Especially for more active individuals the onset of disability can be delayed and only become evident during the end of life

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(fewer years) [48]. Frailty is determined by measuring several factors such as walking speed, weight loss, fatigue, grip strength and is inversely related to CRF and common responses to exercise [49]. Direct measures of CRF from exercise are not easily available but alternative measures of PF have showed up in studies to be important markers of frailty (functional limitations and disability) in the elderly. It is therefore logically supported that lower frailty and mortality scores are can be predicted when the PF respective ones are higher [50, 51]. Various studies have shown that indeed frailty is a risk factor for all-round mortality especially in postoperative events also during or post hospitalization settings [50-56]. The 6-minute walk test is one common walking test that is highly relevant to frailty and is associated with multiple domains of physical function in the elderly and most importantly in patients with CVD [57-60]. These results show that CRF is directly related to improved survival but also better health and motor functions in the elderly. Exercise therapy application is highly depended on functional status and diminishing frailty therefore enhanced CRF manages just that. ConclusionThe value of CRF is of extreme importance in the clinical evaluation of exercise testing. CRF level has increased its significance as a mortality predictor in asymptomatic and clinically referred subjects. CRF has also shown to be a useful predictor in evaluating patients that would go through bypass surgery, [61] repair of abdominal aortic aneurysm, [62, 63] bariatric surgery, [64] etc. [65, 66] CRF is a predictor of lower mortality and rates of frailty thus lower reliance on healthcare services and on others (family, carers, etc.). [50] The evidence of the direct positive effect of increased CRF in lowering mortality is ever growing [18, 24, 32]. The relevant studies have increased the focus on assessing CRF more closely, in relation to several conditions [6, 67-69]. Low <https://assignbuster.com/development-of-premature-coronary-health-and-social-care-essay/>

CRF is an extremely important risk factor and its ability to be modified quickly and without other therapeutic interventions is one big advantage. At the same time increasing CRF requires simple adherence to basic and widely available procedures to increase PA.