

The concept of Maslow's pyramid for cardiovascular health and its impact on "change cycle"

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Short Communication

Abstract

Since the leading cause of morbidity and mortality is cardiovascular diseases, every individual should think regularly about possessing and maintaining cardiovascular health. In reality, this self-processing is delayed until the occurrence of complications related to cardiovascular inefficiency manifested as chest pain and/or dyspnea. However, people should be trained to think about their cardiovascular health issues as a vital need from early childhood. This goal is achievable by understanding it as a "true human derive" and its consecutive "behaviors". Most people are unaware of their real needs, and even if they know all of their cardiovascular needs, this knowledge is not projected in their behaviors. In the present paper, I try to outline the Herzberg two-factor hypothesis and Maslow's hierarchy of needs.

Keywords: Maslow's Pyramid, Change Cycle, Cardiovascular Health

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Introduction

"Do not only add years to life but also life to years".¹ For this goal, since the most common cause of morbidity and mortality are cardiovascular diseases, each person should think regularly about possessing and maintaining cardiovascular health.² This self-processing should not be delayed until the occurrence of complications related to cardiovascular inefficiency such as chest pain. But how can people be trained to think about cardiovascular health issues from early childhood as one vital need? The answer is embedded in understanding it as a "true human derive" and its consecutive "behaviors". Based on Sigmund Freud's belief, people are most often unaware of their real needs. Even if people know all of their cardiovascular needs, they differ in their behaviors in this regard.

In fact, each behavior is a hierarchy of activities. In each social system, ability and incents are fundamental keys in the determination of appropriate functioning communication. In this way, actions, interactions, and incents are tightly inter-related. By the strengthening or weakening of one factor, other factors will be terribly affected. Stronger incents mean tighter interactions. This chain moves toward accomplishment of a balanced

state through a spiraling process. In this case, cardiovascular system is a highly social one through the presence of delicate interactions between bone-marrow stem cells, endothelial progenitor cells, endothelial cells, platelets, immune cells, fibroblasts, and other cells. By the dysfunction of one, the basis is prepared for loss of cardiovascular safety and health. The goal of the present essay is to link Maslow's pyramid for cardiovascular health with its impacts on the "change cycle".

Discussion

According to the motivators-hygiene hypothesis or the two-factor hypothesis by Fredrick Herzberg (1959s), the correct function of a system depends on two factors, hygiene factors and motivators.^{3,4} The hygiene factors are related to principal key features which are not directly involved in efficiency, but only prevent complications related to reduced functional capacity by facilitating correct functioning. These factors describe environmental variables.⁵ Unsatisfying hygiene factors may lead to reduced functional capacity, but by recovery of suitable conditions the production power will be refreshed. In the cardiovascular system, these factors can be interpreted as the present milieu, on which cardiovascular cells are embarked. In normal

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milieu, the cardiovascular system works in its optimal efficiency and, vice versa, a healthy cardiovascular system is involved in the maintenance of a healthy milieu. Diseased vessels impose a great threat on the health of the whole cardiovascular system through creation of an unhealthy milieu, which describes the impact of "peer pressure" both in cardiovascular system health and disease states. Motivators ensure better functioning. In this case, presence of motivators at the appropriate stage of life will guarantee "the sense of" having a healthy cardiovascular system. People differ with respect to their motives, the backbone of behaviors. Motives are the reason for the initiation and maintenance of behavioral traits and determine the total direction of behaviors. In healthy persons with affected relatives, these motivators act strongly, but with the passing of time these factors may fade gradually if they feel safe. This is because people usually act according to their perceptions, not reality. Thus, motivators need regular reinforcement. In diseased persons, motivators are stronger because the drive is stronger. Learnt behaviors become persistent if the success rate of mitigating chest pain or other complications of an unhealthy cardiovascular system is higher than failure rate; because patients gain positive attitudes and motives. However, motivators may gradually fade if the patient feels unsuccessful in the recovery of health after enough attempts. Often, a brief or single episode of failure will not result in loss of the motivated state. The force of satisfied or hinted motives will decrease over time and more essential derives replace them. Therefore, a person with a healthy cardiovascular system or even a person with full recovery after a cardiovascular event seeks to reply to their dominant needs. By contrast, persons with an unhealthy cardiovascular system try to eliminate the involved situation, but their attempts may be unsuccessful. In order to overcome the tension induced by failure, this patient will search for a new way through trial and error. In this case, the patient may develop coping behaviors. On the other hand, the patient may replace their aims to satisfy their needs. Further failure may lead to cognitive dissonance, which means disproportional feelings. This increases tension, and by ongoing failure the patient reaches a state of frustration. The following states, as defense mechanisms, might be rationalization, fixation, and resignation.

Therefore, for regular monitoring of cardiovascular health, everybody should regularly

assess his/her own cardiovascular hygiene factors and motivators. Herzberg's cosmopolitan hypothesis is completely expandable to cardiovascular universe, but ignorance of cardiovascular health by most healthy cases is uninterpretable by this theory. The difference between behaviors of healthy and diseased cases is "priority of needs" which is interpretable by Maslow's pyramid of needs. Maslow refers to needs and motivations but Herzberg discusses aims and stimulators which satisfy these needs. Hierarchically, deficiency or D-needs (physiologic, safety, belonging/love/social, and esteem) and self-actualization needs form a pyramid in staged levels.⁶ For patients with an impaired cardiovascular health state, the first level of the cardiovascular pyramid is economic issues. Patients should be able to pay for pills and physician-advised interventions, surgery, and rehabilitation sessions. Patients, especially elder ones, with intractable symptoms, like very low threshold angina or cases with end-stage heart failure, are in an emotionally delicate state. Indeed, chronicity of disease can be very tiresome for family and friends. Thus, family and social support will be the second level of the pyramid. Availability of automated defibrillators at public places is a kind of social support. Patients with cardiovascular disease, especially cases affected at early stages of life as complex congenital heart diseases, peripartum cardiomyopathy, dilated cardiomyopathy, and etcetera, may find difficulties in meeting the need for belonging and love. Esteem refers to the way patients see themselves. Depression is a great threat for patients, especially if the diseased state has caused great limitations in their life activities. Finally, a patient with a severely damaged cardiovascular health state and with decreased quality of life (such as cases who experience chest pain with small activities or device dependent heart failure patients), will not experience the self-actualization state. However, this stage could be interpreted as seeking optimal self-care, self-management, and adherence. This stage is achievable after meeting D-needs. In a healthy person, with or without risk factors, this pyramid differs which is depicted in figure 1. In this case, availability of a healthy diet and sufficient rest and recovery are the first level. Then, the evaluation of the cardiovascular health state of the safe case is necessary. If risk factors such as smoking, unhealthy diet, over weight and obesity, stressful life style, physical inactivity, strong family history, metabolic problems, lipid disorders, and other risk factors are

found, the next level is the modification of risk factors and therapeutic life style changes. This will progress to cardiovascular enhancement through appropriate cardiovascular exercise. Based on the overload principal, this cardiovascular training should be strong enough (not very weak, but not very strong) to exert strengthening pressure on the cardiovascular system.⁷ Finally, these hierarchies of cardiovascular needs constitute the first level of Maslow's hierarchy of needs (physiologic or biologic needs). This means the presence of a pyramid inside a bigger pyramid. However, it should be noted that

some persons may decide to sacrifice one level for another level. The cardiovascular health pyramid may be sacrificed in order to climb the pyramid to esteem or self-actualization levels of Maslow's hierarchy of needs. Indeed, people in various geographic locations differ regarding their belonging to levels. In developed countries, most people are at the top of the pyramid, but in under-developed countries people are usually in the stage of finding a healthy diet for the cardiovascular system. Developing countries pass the stage between these extremities of the pyramid.

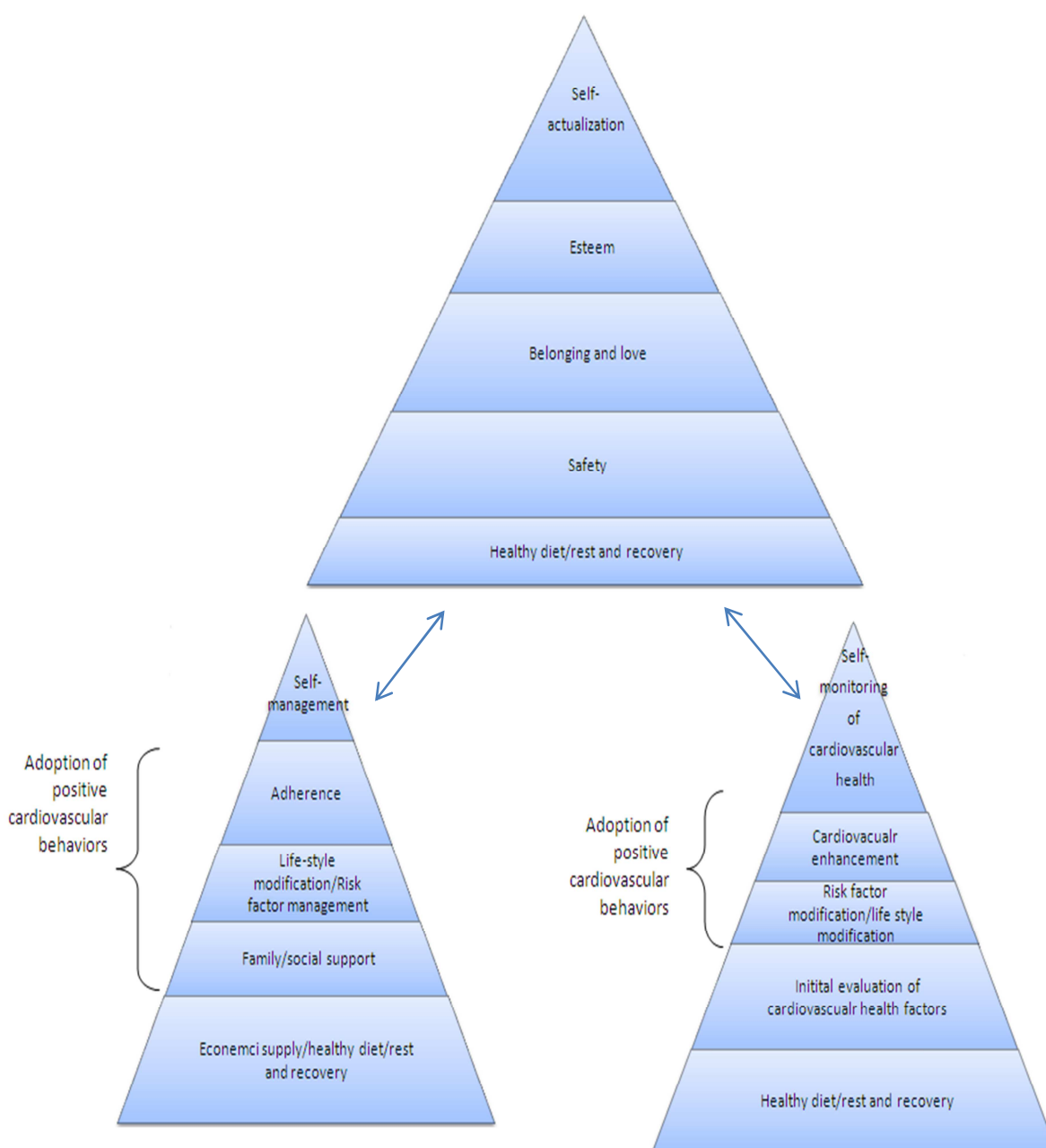


Figure 1. Maslow's pyramid and "change cycle" for cardiovascular health in healthy person with or without risk factors

In this need-oriented approach, stronger needs determine behaviors, but the person may feel cyclic variations in needs. As long as behaviors are enforced, they find a strong typical pattern and are hard to change. Thus, ignorance of cardiovascular health and its requirements becomes a permanently set behavior for most people. Promotion of cardiovascular health is not a phenomenon related to one specific stage of life. Since cardiovascular diseases most often affect elderly people, behavioral changes in this population are only possible in suitable conditions and after a prolonged time, which is not cost-benefit. Behavioral training should be started at early stages of life. Earlier and striking inputs produce bigger feedback loops with more prominent behaviors. In this regard, expectancy and availability are two factors which affect need power. Expectancy is based on the person's experiences in the past or present. A healthy person with strong family history for cardiovascular diseases has strong expectancy for infliction by cardiovascular diseases. This expectancy imposes upon his/her behaviors vastly. Stronger expectancy is parallel with stronger motives. This is true for cases with other diseases which affect the cardiovascular system such as diabetes mellitus, hyperlipidemia, hyperhomocysteinemia, and etcetera. However, this environmental factor always affects expectancy. For a patient with orthopedic problems or restricted physical activities, the routine walking advice is not applicable, and in other terms it would be "unavailable". Other examples are economic problems with inability to afford the costs for cardiovascular pills and/or percutaneous cardiovascular or surgical interventions. Thus, behavioral activities can be divided into goal-oriented activities and goal activities. Their difference is regarding to their different impact on needs. The former lasts longer, but it should be noted that in cardiovascular system health some goals are unachievable. Physicians should make it clear to patients that in some instances, such as patients with impaired left ventricular function, achievement of complete recovery is impossible.

Diseased patients first feel the need to change. Cardiologists play an important role in the change process. Physicians should be familiar with the "change cycle". By self-insight, changes made by the participative "change cycle" last longer at the expense of the long time labored for them. Changes made by coerced "change cycles" are developed rapidly, but last shorter. Thus, for effective prevention, group-based changes are preferred. It is

true that all fellow-sufferers want to be in the same boat. In behavioral approach, unfreezed traits are controlled by outputs. Newly developed behaviors should be enforced for fixation and refreezing to prevent extinction. For vascular enrichment, cardiologists should be involved in the behavioral enforcement cycle. Reinforcement strengthens discriminated operant behaviors in order to increase their resistance to disruption and extinction.⁸ The most permanent behaviors are made by initial continuous enforcement followed by intermittent enforcement. Life style modification behaviors need strong enforcement, since extinction rate is high especially in environments with counter attitudes. Continuous enforcement is parallel with the rapid rate of induction and rapid fading, but intermittent enforcement is associated with both slower induction and extinction rate due to internalization. For risk factor modification, such as smoking cessation, stress management, and ongoing physical activities, physicians should be involved in preventive measures in the way that patients apply internalization as an adaptive response. In families with great attention to cardiovascular health promotion, due to great knowledge or due to an affected case, family members may adopt identification adaptive response. In these families, children adopt healthy behaviors earlier in life which means stronger commitment to these behaviors.

Therefore, for training a society for the adoption of healthy cardiovascular behaviors and a successful "change cycle", physicians should pay great attention to needs, motives, and behaviors.

Conflict of Interests

Authors have no conflict of interests.

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