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ANALYSIS OF THE EFFECTS OF ENVIRONMENTAL FACTORS ON THE ORIGIN OF HEART DISEASE

(ANALYTICAL ARTICLE)

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Annotation

This article was studied and written in a generalized way in a case where the influence of environmental factors on the origin of cardiovascular diseases was used . Cardiovascular diseases (CVDs) are the number one cause of death in the world. In most analyses of health problems, environment plays a significant and modifiable role in causing the problem either directly or indirectly through behavior. This study aims to understand the patients and healthcare providers' experiences about the environmental determinants of CVD risk factors based on the Precede Model.

Key words

Disease, blood, heart, environmental factors.

Cardiovascular disease (CVDs) are the number one cause of death globally, It is predicted that by 2030, almost 23.6 million people would die from CVDs, mainly from heart disease and stroke (1). In Iran, CVDs are the leading cause of mortality and morbidity, with high cost to health care (2). The Inter Heart study showed that nine modifiable risk factors (abnormal lipids, smoking, hypertension, diabetes, abdominal obesity, psychosocial factors, consumption of fruit and vegetables, regular alcohol consumption and regular physical activity) were associated with more than 90% of the risk of an acute myocardial infarction in this large global case-control study (3). Nonetheless CVDs simplicity and completely are preventive (4). Interventions that have used both educational and environmental measures have been more successful in achieving changes in health behavior than single element interventions (5). A face-lifting environment that makes the health-promoting behavior the easiest behavior to perform is key to a change in the behavior of the at-risk population, as well as to a change of the environmental conditions (6). Examples of environmental conditions include social influences (such as norms, social support, and reinforcement) and structural influences (such as access to resources, organizational climate, and policies). Barriers to performing health behavior are often structural; such as lack of health insurance, high-fat cafeteria foods, high cost of healthy foods, and unsafe neighborhoods for jogging or walking (6). Environmental change usually requires people outside the at-risk population to take action to modify the environmental conditions (6).

To develop effective interventions, it is important to understand the behaviors of target population. Qualitative methods are most ideal for gathering in-depth information to help develop this understanding (7). On the other hand, qualitative methods can help the health educators to more fully understand the health problems, behavioral and environmental causes, and determinants from the perspective of the people involve (8). Several studies have examined environmental and social barriers of healthy behaviors. In this studies the barriers to improve the lifestyle in regards to

physical activity and diet included financial , stress (9) lack of social support (10) and cultural barriers, such as lack of women- only exercise facilities (11), unsuitable built environment, unsafe neighborhood and bad weather for doing physical activity and costs of healthy foods, unavailability healthy foods in stores (12, 13). These studies did not use theories related to individual health behavior in order to identify health problems, behavioral and environmental causes and their determinants (14). The PRECEDE model that is often used in health education and health promotion is a logical model that describes the causes of health problem (6). Based on the study by Green, the behavioral causes can be classified to factors as predisposing, enabling and reinforcing. These factors act as determinants for particular behavior, The most effective interventions for improving health can be expanded for each factor (15). The predisposing factors are antecedents to behaviors that include knowledge, attitude, belief, exiting skills, and self-efficacy. The enabling factors are antecedents to behavioral and environmental change include the availability, accessibility, and affordability of health care and community resources, laws and policies. The reinforcing factors are those factors following a behavior that provide continuing reward or incentive for the persistence or repetition of the behavior, which include social support, peer influence, significant others. The planners may see determinants as the processes of change that must be activated or set in motion if the necessary behavioral and environmental changes are to occur (16). A qualitative method with directed content analysis approach was selected. The goal of a directed content analysis approach is to validate or extend conceptually a theoretical framework or theory. Existing theory or research can help focus the research question and it can help researchers begin by identifying key concepts or variables as initial coding categories. This approach was employed by Hsieh and Shannon in 2005.

The data were collected through semi-structured in-depth interviews from September to March 2012. After transcription and analysis of each interview, in case of ambiguity and for probing into participants' experiences, the interview was repeated to clarify different aspects of the subject, if needed. Totally, 62 face-to-face interviews with 50 patients and 12 healthcare providers who work in the Diabetes Units of Health Centers of Alborz University of Medical Sciences and Health Services were conducted. Each interview lasted between 30 to 60 minutes and all the interviews were conducted in a private room. The interview guide consisted of open-ended questions based on subcategories of enabling and reinforcing categories of Precede Model to allow respondents fully explain their own experiences.

The average age of participants were 46.5 ± 5.97 . The main researcher look at documents of blood test results of patients performed by Diabetes Units' staff, if patients had at least one biochemical CVD risk factors such as pre-diabetes, type 2 diabetes (T2D), metabolic syndrome, hyperlipidemia and hypertension for at least one month, and previously received advises from healthcare providers to change lifestyle, the main researcher contacted each of the potential participants to explain the objectives and the research questions, and if the participant agreed to take part in the research, an interview was carried out. The patients were chosen using purposive method to consider the maximum variation sampling based on (sex, age, level of education, occupation and the type of risk factor) from four health centers associated with Alborz University of Medical Sciences which is located in Karaj-Iran. The four centers were selected to obtain an understanding of patients with various socio-economic statuses. Patients with previous heart attack, stroke, open heart surgery or angioplasty, newly diagnosed patients (less than one month) and all type 1 diabetes patients were

excluded from the study (n = 7). In addition, 12 healthcare providers from the Diabetic Units of four health centers, including three general practitioners, three nurses and three dieticians were individually interviewed. The mean age of healthcare providers was 38.4 ± 9.8 and 10 of them were female.

This study was part of the PhD thesis of fist author, conducted in diabetes units of health centers affiliated with Alborz University of Medical Sciences. The authors would like to thank all participants who made this study possible. In subject‘s view point, lack of behaviors such as stress control, diet therapy and physical activity were the main cause of the risk factors of CVD and the environmental factor is one of the barriers for conducting these behaviors. The environmental barriers included of structural and social environment. The structural factors are in three subcategories of “availability and accessibility of health resources”, “new skills”, and “law and policies” which are located in enabling category. The social factor included of three subcategories of “social support”, “motivation to comply” and “consequences of behavior” which are located in reinforcing category, that the most barriers to performing health behavior were often structural (enabling factors). The environmental factors are barriers for doing health related behaviors, it recommends in order to designing health promotion programs, policymakers not only focus on patients' education but also consider specific facilities in related to economic, social and cultural status. Then Identifying these determinants will help the program planners in designing of future programs to select the most appropriate methods and applications to address these determinants in order to decrease unhealthy behaviors in order to reducing CVD risk factors, and finally to prevent of CVD, because the most immediate impact of an intervention is usually on a set of well-defined determinants of behavior.

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